

MANUFACTURERS' RECORD

Chief of Bureau of Statistics

A WEEKLY SOUTHERN INDUSTRIAL
RAILROAD AND FINANCIAL NEWSPAPER.

LUMBERMEN

Will find much to interest them in this issue of the MANUFACTURERS' RECORD. In a letter from London Mr. C. J. Haden, of Atlanta, writes of the British market for Southern timber. The condition of trade at all the leading American centres is fully set forth, and there are several articles of interest and importance to lumbermen.

Phosphate Miners

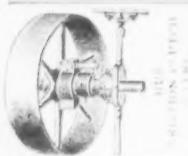
Will read with interest a second article on the future of the Florida phosphate industry by Mr. C. C. Hoyer Millar. We publish full and reliable phosphate market reports and quotations and general news of the industry and its development.

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 110.

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VOL. XXII.
No. 7.

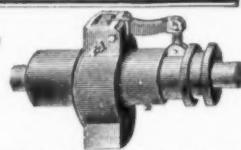
Baltimore, September 16, 1892.


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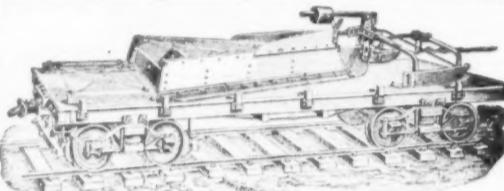
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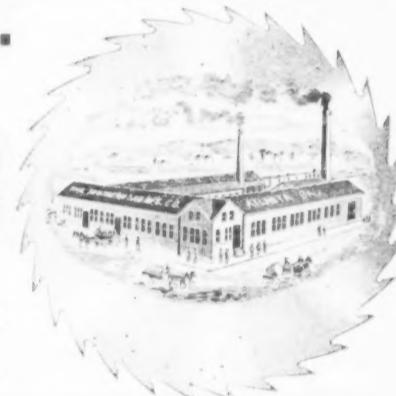
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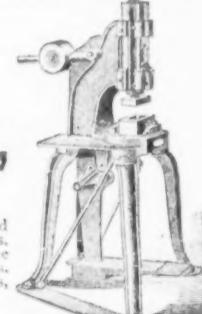


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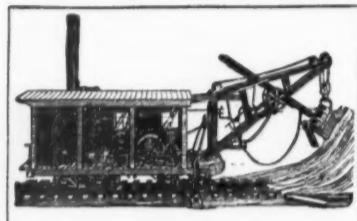
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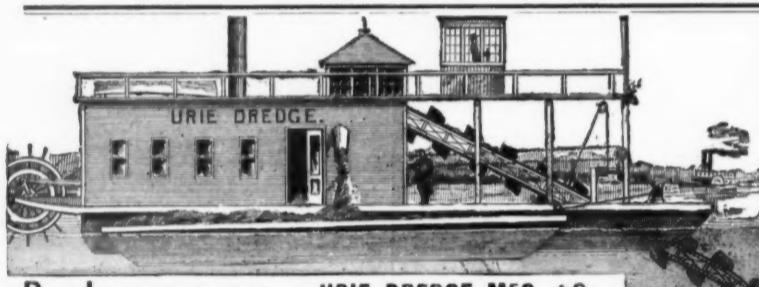
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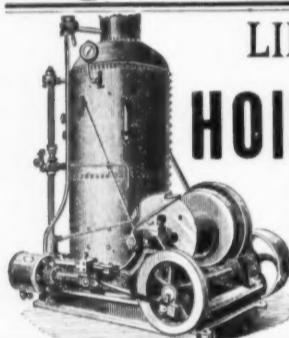
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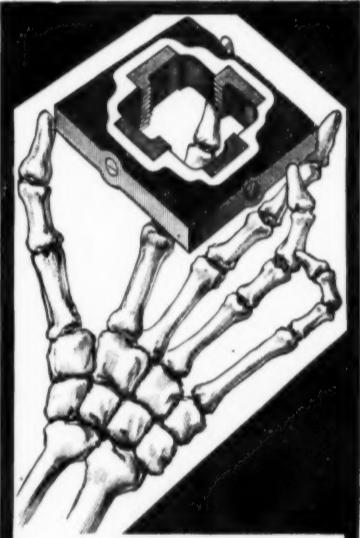
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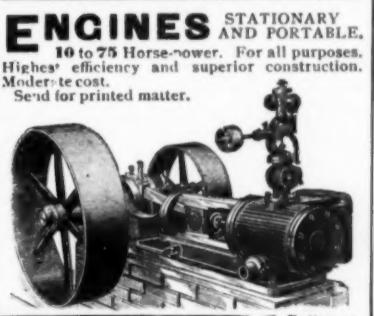
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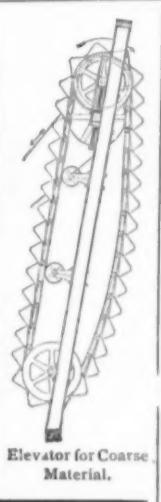
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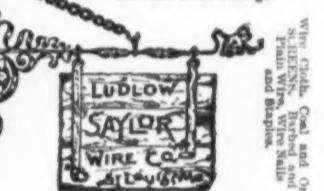
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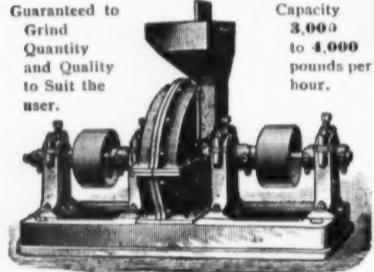
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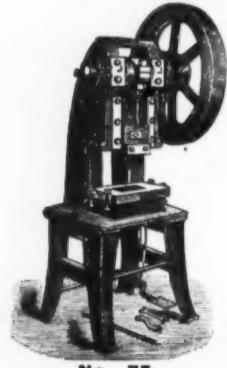


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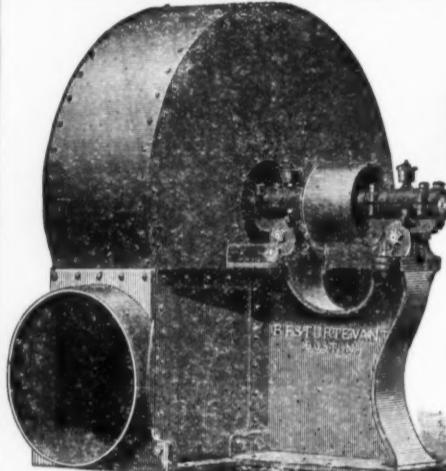
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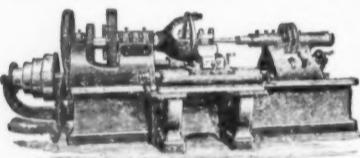
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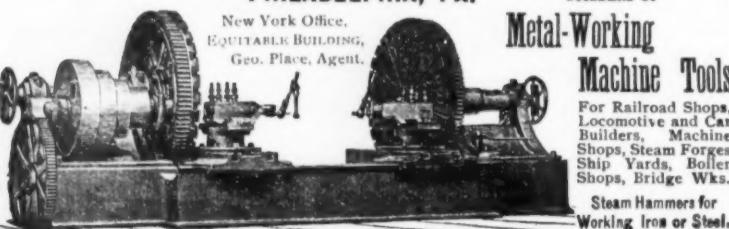
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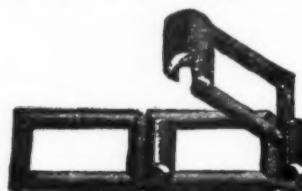
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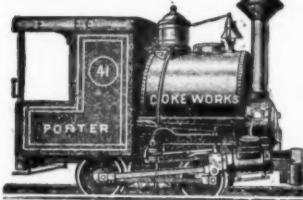
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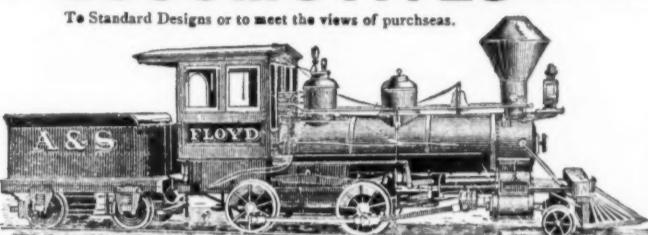
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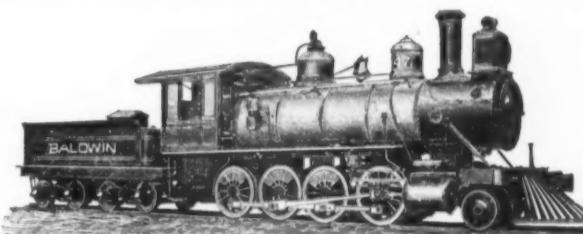
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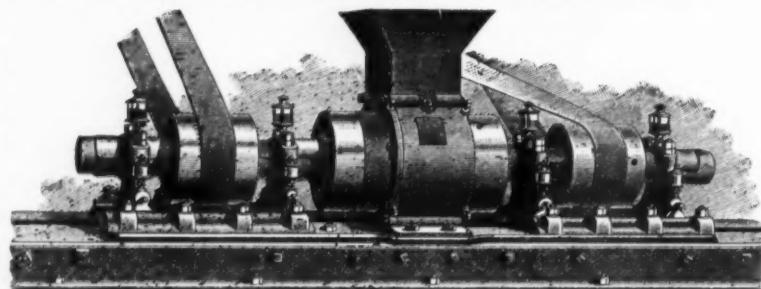
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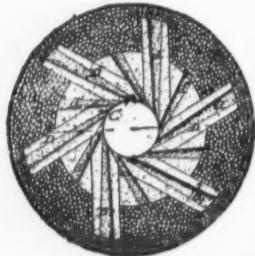
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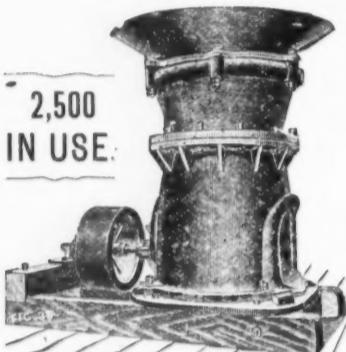
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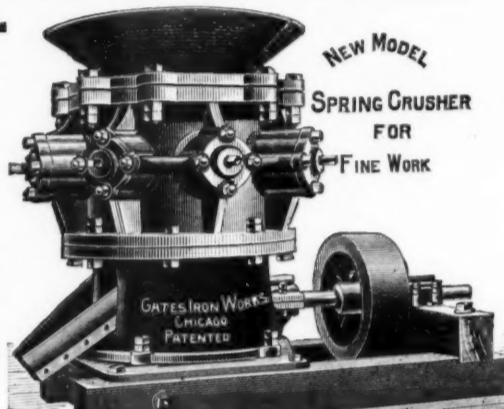
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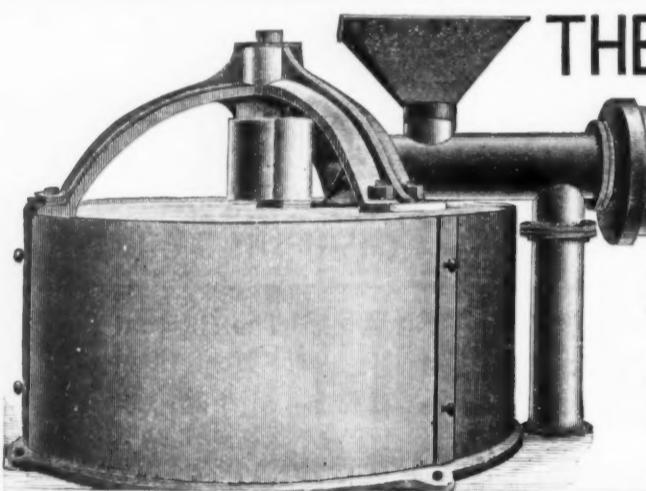
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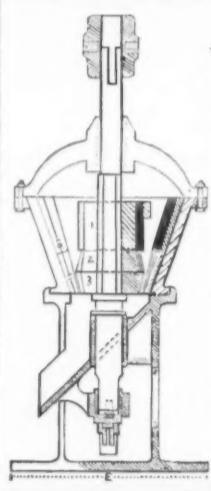
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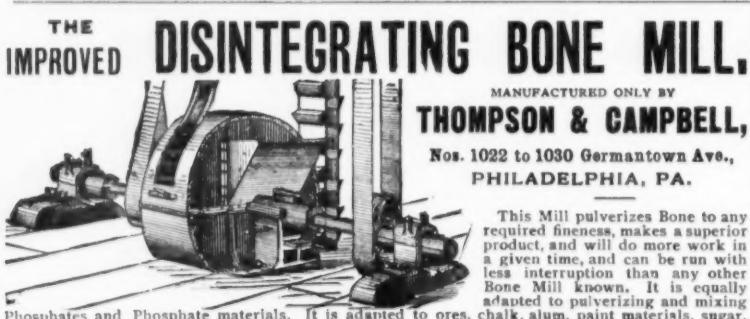
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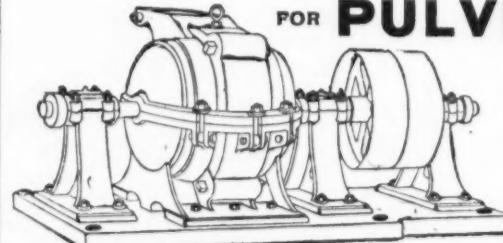
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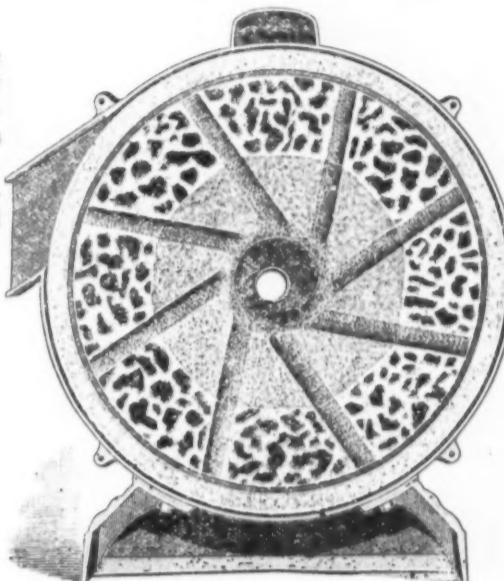
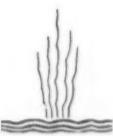
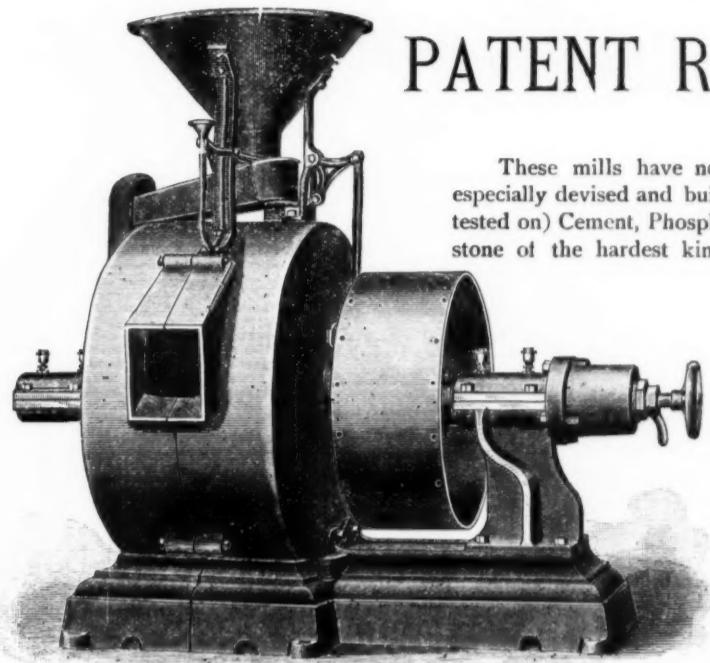
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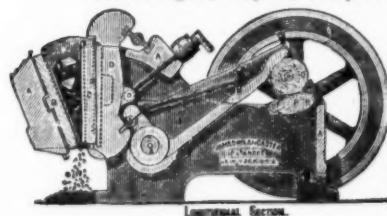
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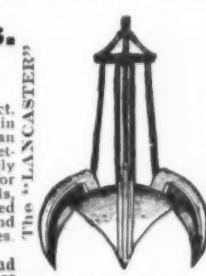
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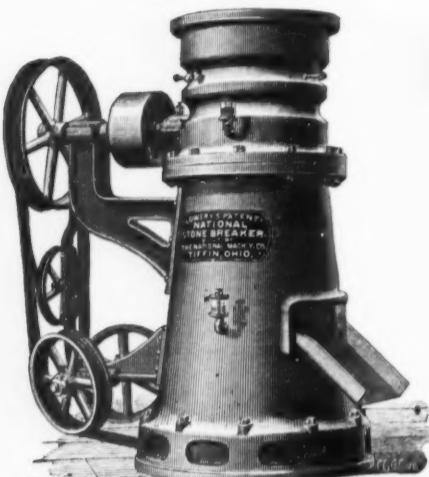
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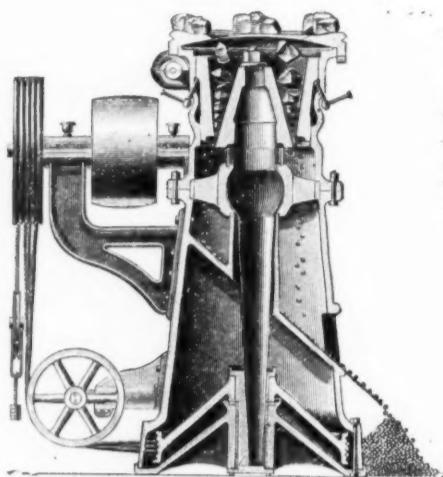
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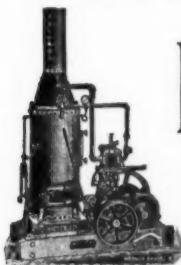
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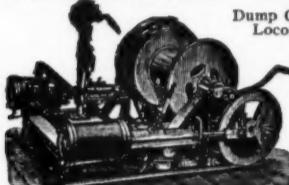
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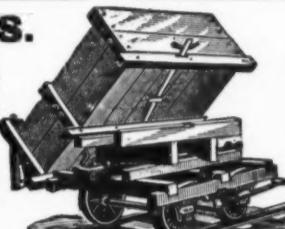
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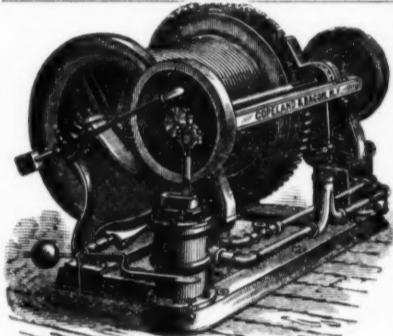
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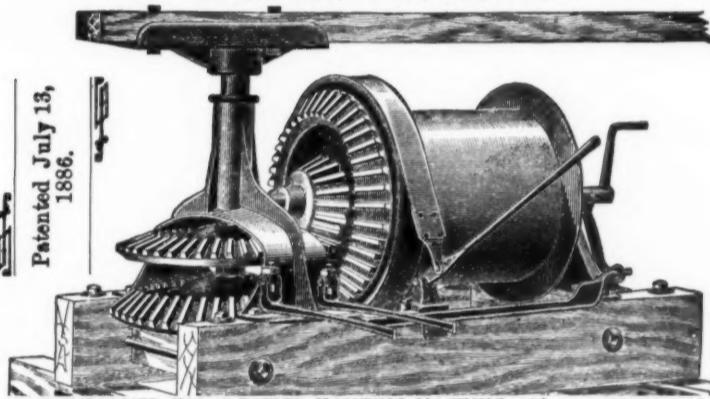
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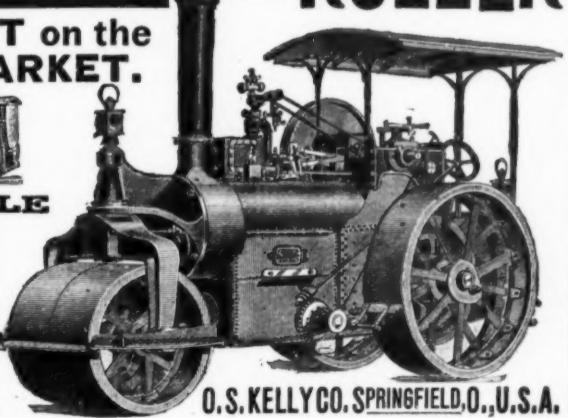
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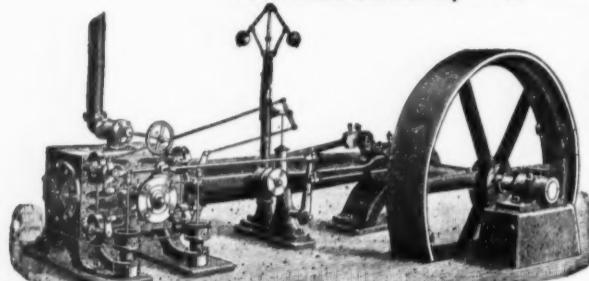
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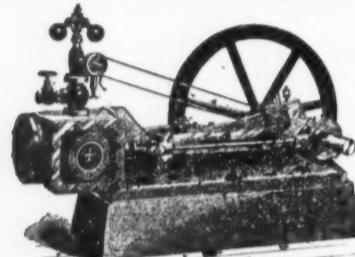
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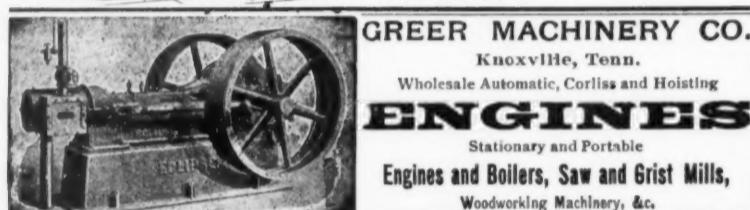
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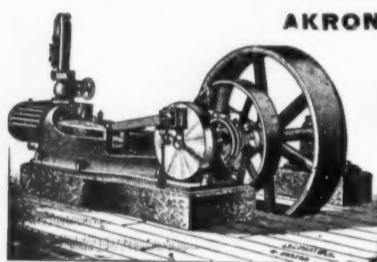
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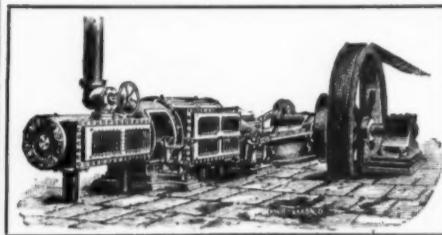
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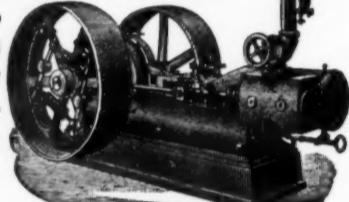
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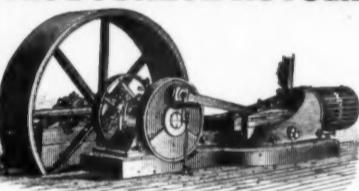
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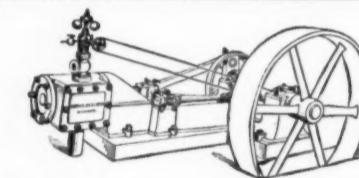
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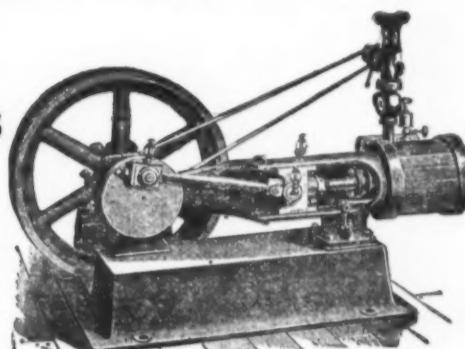
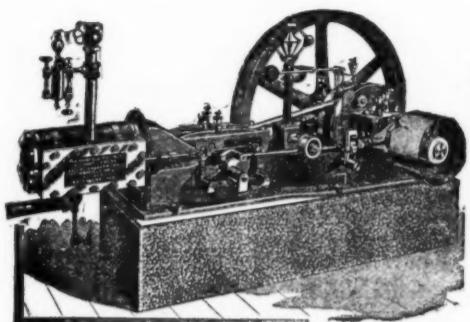
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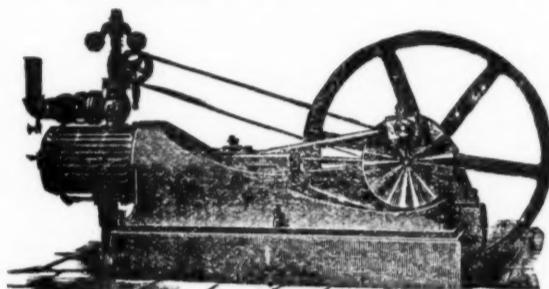
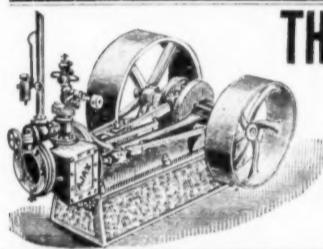
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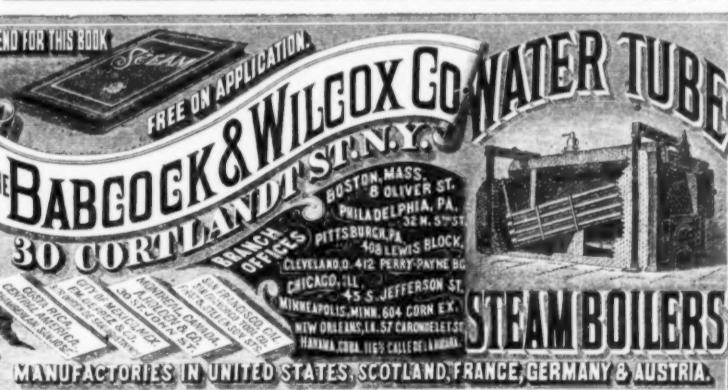
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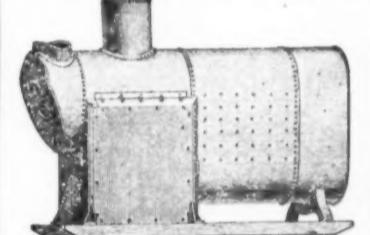
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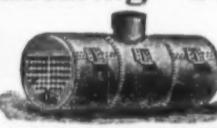
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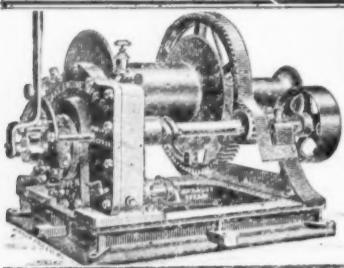
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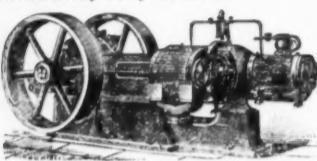
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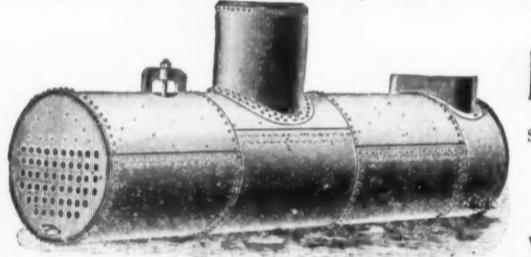
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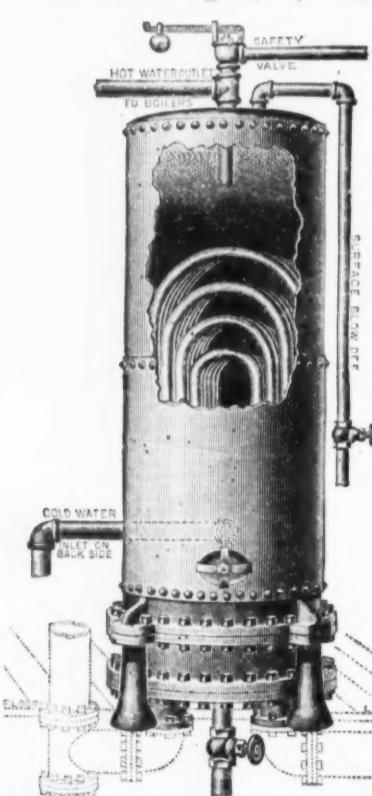
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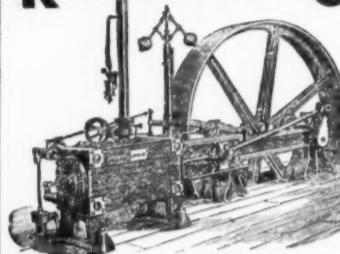
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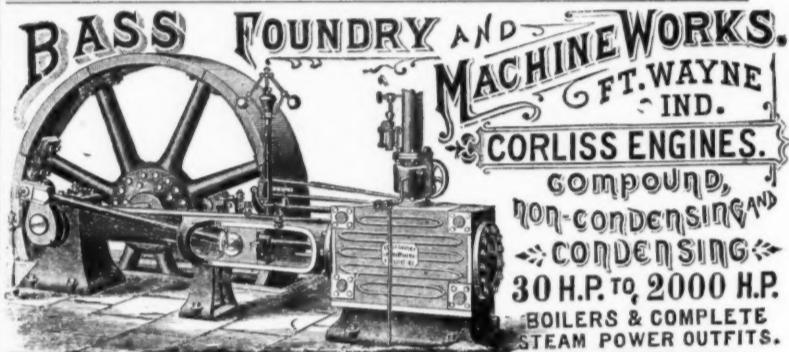


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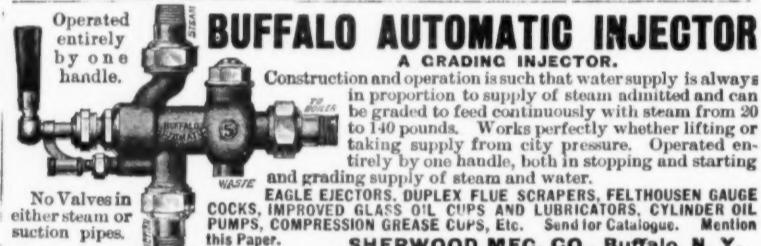
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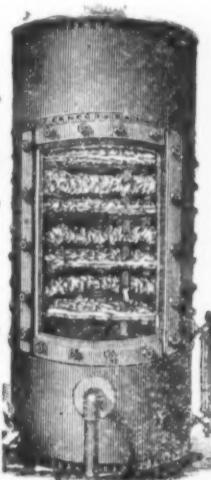
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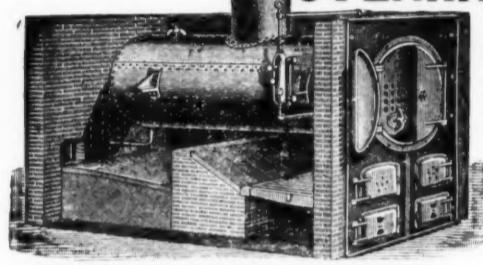
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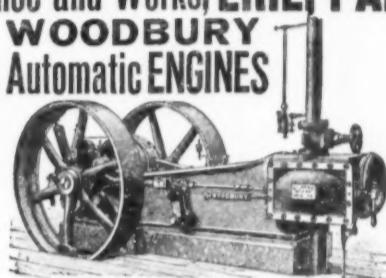


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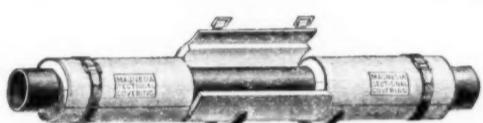
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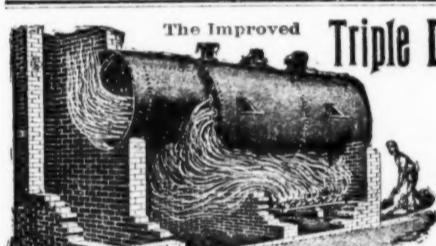


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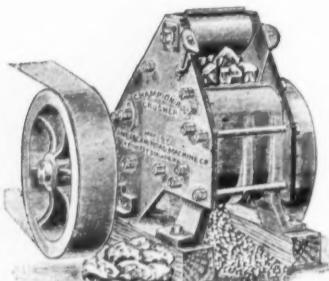
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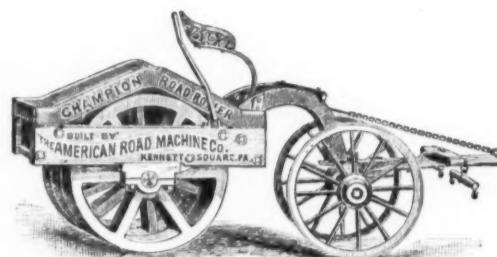
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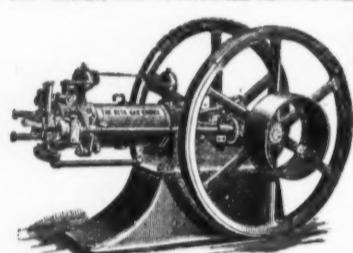
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Florida Phosphates: Future Prospects.

By C. C. Hoyer Millar.

In our former article we dealt with the influence which the exploitation of the Florida phosphate deposits had exercised upon the phosphate market, and also with the practical financial results of the past operations. We will now venture upon the future prospects of Florida phosphates.

In criticising the methods of mining and marketing the high-grade rock and showing the poor financial results obtained, we pointed out the weak spots which had caused the shrinkage or loss of profits which might otherwise have been earned. That mistakes should have been made at the inception of a new field in mining enterprise is only what has to be expected, for in the early history of all similar ventures (more especially when a regular boom has inaugurated the commencement) the record has always been the same, since new ventures have to go through their course of infantile complaints in the same way as human beings. That the maladies were more than usually severe in the case of Florida hard-rock mining is due first of all to the absolute inexperience of the greater part of those engaged therein, and secondly to the many unforeseen difficulties which confronted the pioneers, but most of all to the want of judgment in offering and marketing the product of the various mines.

Evolution, however, is the cure for all such ills, and although in the past the financial results have been unsatisfactory in most instances, yet this forms no ground whatever for supposing that the hard-rock industry is not a sound one in itself and likely to prove lucrative, at all events to those companies which are directed with good business judgment combined with solid, practical management.

At the time when the first discoveries of high grade rock were made in Florida the sources which supplied Europe with her requirements of high testing material were the deposits of Canada, Norway, France (Somme) and Aruba (West Indies). The difficulties in mining Canadian and Norwegian apatite render the cost of production so high that these sources of supply cease to be able to produce when the market price for their product falls below 12d. per unit. In any case the total production of high-grade ore from both sources has never exceeded about 20,000 tons per annum. The quantities shipped annually from Aruba have varied from 15,000 to 30,000 tons, and the price has been sometimes as low as 8½d. per unit. The analysis of this material, which is much liked by manufacturers, runs from 72 to 77 per cent. phosphates, with between 2.50 and 5 per cent. of oxide of iron and alumina. The Somme phosphate deposits of Northern France have been the largest producers of high-grade material, testing 70 per cent. and upwards, and the quantities shipped annually from the mines have exceeded 100,000 tons. Present production has been curtailed to about half that quantity. Outside these main sources of supply there have been other producers of high-grade material, notably Sombrero Island (West Indies), but of late years the work has been intermittent and the quantities so small and

uncertain as not to affect the market. There are also some islands in the West Indies and off the coast of Mexico which produce rock and arenaceous guano phosphates, but the quantities shipped are not important enough to be considered as a factor in the phosphate market at this date.

The requirements of the European market for high-grade phosphate are between 150,000 and 200,000 tons per annum, and a glance at the shipments from Florida for last year and the first six months of this year will at once show how large a proportion has been appropriated by Florida.

This suggests the question as to whether Florida can continue to monopolize the lion's share of the trade, and we have no hesitation in answering in the affirmative, for past events have clearly shown the possibility of producing high-grade rock at figures which enable her to keep prices too low for the bulk of her competitors, and yet high enough to leave sufficient margin for profit to well-conducted enterprises. The valuable experience gained since the beginning of the hard rock industry has enabled the cost of production to be greatly reduced both by the adoption of more practical means of mining, extraction and preparation, and also by saving and preparing for market much that was formerly thrown aside as useless. In fact, the whole industry is gradually getting into solid practical shape, and the errors of the past are not likely to be repeated. The newer enterprises now being set on foot are in the hands of experienced miners, and the deposits recently begun to be exploited have been selected with far more care than at the outset, when every mine was supposed to be one solid mass of high-grade phosphate.

It seems certain, therefore, that Florida can and will maintain the foremost position as a producer of high-grade phosphate, and it rests with those interested to arrange with one another to keep up prices to a paying level.

River pebble stands on an entirely different footing, for this has to compete with South Carolina river rock. The cost of production f. o. b. vessel is slightly in favor of Florida, but freight to Europe from South Carolina being a little cheaper, counterbalances this advantage. The best course, therefore, for both industries would be to arrive at some arrangement for pooling the output with a view to keeping up prices and avoiding competition, which injures both industries by decreasing the margin for profit.

As regards land pebble, although the prices for this product have fallen very considerably since the first lands were prospected, there is still plenty of margin for a profitable business on a large scale. Up to date only a few cargoes have been shipped, as the development of the land pebble industry has been far slower than was originally anticipated, and the capacity of the various plants erected has in most instances been found to be considerably smaller than the constructing engineers imagined. Much has still to be learnt as to the most economical and practical manner of separating the pebbles from the matrix, but the clean washing, the possibility of which was doubted by many, is *un fait accompli*. The pebble with the low percentage of iron and alumina will

probably find its way to Europe for the most part, while the remainder will go into consumption in the Northern markets of the United States, where it is likely to prove a strong competitor to the South Carolina land rock. The Florida land pebble is higher in phosphate and lower in iron and alumina, and costs less to put f. o. b. vessel. In all probability when this industry is worked on a large scale, which seems likely to be the case before long, the South Carolina land rock miners will find their market restricted for the most part to local manufacturers and inland Southern points, where they will be able to hold their own more easily than in the Northern markets.

To conclude, the real future of phosphates lies in the development of the enormous deposits in Florida. A few years ago the sources of supply available, with prices at a level about 50 per cent. higher than those of to-day, were all within well-defined limits as to area and productive capacity, but the discovery of the Florida deposits has changed the outlook entirely, and the world has now in sight a source capable of supplying any annual quantities likely to be required for a hundred years or more to come without bringing into view, even on a distant horizon, any limit or end to Florida's enormous productive capacity.

The Palmetto and Its Products

By Otto Rohkramer.

[Translated from the *Hamburger Vereinsblatt* for the MANUFACTURERS' RECORD by Clara Owen Davies.]

Among the ten thousand specimens of the palm known to botany are many varieties of the palmetto, among which the *Sabal*, or cabbage palmetto, and the *Chamaerops Hystrix*, or blue palmetto, are to be named as of especial value. The blue palmetto is commonly called scrub palmetto where it grows. Both of these valuable palms grow not only on the shores of the Gulf of Mexico, but also along the Atlantic coast, and are to be found as far north as Cape Fear river, in North Carolina.

The *Sabal*, or cabbage palmetto, reaches a height of fifty feet. The trunk is very hard and durable, is not attacked by rot or the teredo, and is therefore of great value for piles in harbor work and for all sorts of under-water building. It is to be regretted that the rare qualities of this plant are not more widely known, and that it has been so seldom adopted in such sub-structures in ocean and river work.

The blue or scrub palmetto is easily transplanted, of easy and spontaneous growth, and is to be found in endless quantities in Florida and adjacent territory. It is not limited to the sea coast; it is spread over the whole State of Florida in boundless tracts. The leaf and stem are almost entirely composed of a valuable fibre, which in the raw state has a coarse, rough appearance. The weight of the fibre forms about one-fifth of the whole weight of the green plant. The fibre is peculiar in its formation and arrangement. In the leaf stem the fibres run parallel, and are from one to fifteen feet in length. The stem seems to be made up of a bundle of fibres the size of a large horsehair and running parallel, and these finest fibres, which seem to the unaided eye absolutely

one and indivisible, are known to be made up of other finer fibres indefinitely, as the microscope enables us to discern.

The leaf stem is tough, somewhat pliable, but coarse and difficult to work up. The coarse fibres of which it is composed are rough and tough and not very pliant when dry, but exceedingly flexible when wet. If these coarse fibres are skillfully handled they can be divided into extremely small threads, which are accordingly very soft and flexible, and therefore much more durable and more easily spun and woven. A more delicate treatment gives to them added suppleness and makes them all the more durable. Three grades of fineness can be had. In many instances the finer grades of fibre resemble wool more than cotton, linen or silk, and they feel very easily, that is, can be easily made into felt.

It is not necessary to make a distinction between the different varieties of palmetto; they are in reality only distinguished by the relative qualities of the fibre. These are not more noticeable than, for example, the varieties of wool, and it is therefore quite unnecessary to particularize them.

If one realizes that Florida is larger than England, so can one understand what immense quantities of palmetto are destroyed yearly in this State. The frequent and universal forest fires have not diminished the growth to any great extent. On the contrary, the palmetto, after such fires, seems to spring up all the stronger and fresher.

Experiments have been made for many years to bring this tough, rough fibre of the palmetto into a marketable condition. The first to succeed after long-continued effort in placing the manufacture of the palmetto fibre on a well-established business basis, and that, too, in a large number of its varied uses, is Dr. Silas L. Loomis, of Fernandina, Fla. To reach practical results peculiar machinery had to be invented to work up the leaves and fibre, and there were many varieties constructed, of which several have proved successful.

The experiments made in Fernandina, Fla., show clearly that the palmetto fibre is of great value commercially, and that the plant which not long ago was considered not only worthless, but a burden to the land, will in the future be of great importance. It will almost, if not quite, equal cotton for varied uses and as a source of wealth.

Dr. Loomis, who is an authority, divides the possible application of the palmetto fibre into articles made of the raw material and manufactured articles. The latter he further divides into articles made from the sap and articles made from the fibre. The sap of the plant constitutes about two-thirds of the whole weight of the green plant.

ARTICLES OF THE RAW MATERIAL.

1st. Roof Covering.—The leaves, when rightly handled, make a thick, durable roof, as well as siding for building. In Africa this material is extensively used for building purposes. On the Carnegie estate, Dungeness, on Cumberland across from Fernandina, palmetto houses have recently been built, and others of the same sort can be seen through Florida.

2d. Brooms.—These are in common use wherever palmetto grows. To make a broom coarse or fine leaves are bound

together with the necessary bands, and one has a very useful article.

3d. Brushes.—For scrubbing and other rough uses brushes are also made by binding leaves together, and are very cheap, easily made and useful. Dust brushes and brushes for decorative painting and other such purposes can be made from the red-brown net-like fibre which grows at the junction of the leaf stem and trunk. These brushes are not difficult to make, and are very durable and well adapted to such work.

4th. Hats and Baskets.—When the young leaves of different grades of fineness are split and bleached one has an article which, when braided in different styles, can be made into hats, baskets and bonnets, which vary in price from 10 cents to \$3 and even \$20, according to quality and decoration. These are also wrought into a variety of ornamental and decorative forms. Large capitalists are interested in this business in America and still more in Europe.

5th. Food.—The bud of the cabbage palmetto (from which the plant derives its common name) is edible both raw and cooked. Its taste is not unlike the cabbage. In Africa this cabbage is universally used as an article of food. Every tree has only one bud, and after it has been severed from the stem the tree dies.

6th. Piles.—Trunks of the cabbage palmetto show a wonderful durability as piles in under-water building. Piles in the wharves of Havana of this material are said to have been in use for more than one hundred and fifty years, and are still in a good condition. The old Fort Moultrie was also built of palmetto.

7th. Potash.—Ashes of the palmetto liquified and steamed yield a good quantity of potash.

MANUFACTURED ARTICLES.

A. Articles made from the sap.

1st. Tannin.—Tannic acid is made from the root, the trunk and the leaves. The common process of tanning with oak or hemlock barks always adds to the weight of the leather. As yet no method has been discovered by which in tanning increase of weight can be avoided except by the use of tannic acid. And as the palmetto yields so large a percentage of tannic acid, it is of capital value in the tanner's trade.

2d. Medicinal Uses.—A certain preparation of the sap gives a medicine which has a happy effect when used for the throat and breathing organs. A healing lotion is made and sent into market in Savannah. It is a public misfortune that the medicinal virtues of the palmetto have not been more thoroughly investigated.

3d. Coloring Matter.—Through simply steaming the clarified sap a known dye is obtained which dyes a very pretty brown. From this coloring matter a brown paint can also be easily made.

B. Articles manufactured from the fibre.

1st. Brushes.—The rough, stiff fibres at the point of the leaf stalk are made into brushes through a special process. They resemble hair brushes and compete with them in favor. They are sold principally in Jacksonville and Sanford.

2d. Mattresses.—The leaf is split to a requisite fineness, curled, then run through a peculiar machine, pressed into balls and sent to the mattress manufactory. Machines for this purpose can be seen in Orange Park and in Daytona. The rough, tough fibre is free from all decomposing substances such as sugar, starch, oil, gum, rosin, etc. It is therefore cleanly and healthy, and for this reason very suitable for mattresses. Such mattresses are made in Fernandina.

3d. Upholstery.—The durability of the fibre, as compared with other materials, recommends it for upholstering purposes. The long, tough fibre holds its place until the furniture has become unusable. An upholsterer should be able to accomplish

twice as much work as with any other material.

4th. Cordage.—The long, tough fibre seems very suitable for certain grades of cordage.

5th. Paper-making.—The different grades of fineness which we have in this fibre make it a valuable addition to the article to be selected from in manufacturing paper. It is suitable for all qualities of paper, from the roughest roof paper to the finest sorts of bank note and bonds. One firm spent \$200,000 in experiments on this line. In England and France it has been for more than thirty years in practical use. The material which is there converted into notes and bonds is produced in Africa, and thousands of tons are yearly exported from that country. One firm in Lloyds has for more than twenty years used over 1,000 tons yearly. In England and France the fibre is very well known as a material for manufacturing paper, and daily quotations are made. Only in the last few years has it been used by the paper manufacturers of America, because of the greater expense in procuring it. Since the establishment of the factory in Fernandina this difficulty has been entirely overcome.

6th. Wood Pulp.—The great solidity of palmetto wood pulp makes it of more value than any other wood pulp. It is to be recommended to manufacturers for the making of pails, tubs, casks, globes, rolls, scrolls, wheels, etc. Because of its solidity it is particularly adapted to stucco work and rough casts for models and moldings; in fact, it is good for any form of work where wood pulp could be used.

7th. Felt.—The finer fibres felt very easily, and can be put to many uses, viz., in the place of wool felt in ship-building, and for the polishing of quartz and other stones. With a mixture of 48 to 60 per cent. of wool it can compete with all other felts.

8th. Stuffs and Carpets.—There seems to be no reason why the fine fibres cannot be spun and woven into stuffs and carpets of different qualities. Upon trial it does not seem to mix well with cotton, linen or silk, but it mixes very easily with wool. With a mixture of from 20 to 40 per cent. of wool it can be used for any purpose. It takes all colors excellently, and it is difficult to say what is the proportion of the mixture in such goods. It is especially good for weaving all kinds of carpets.

9th. Underground Cables.—Underground wires which are covered with chemically prepared palmetto fibre have stood unusual tests without injury. For protecting single or small wires this fibre is perhaps the best covering that has as yet been discovered.

Many of the methods for using the palmetto described above have borne the test of actual experiment. The number of these uses grows continually larger. The products have already become valuable articles of commerce. So soon as the achievements of Dr. Loomis, of Fernandina, have become known, capitalists in many of the favorable points of Florida will hasten to build factories for converting the palmetto into useful and ornamental articles of commerce. Then the hitherto neglected and worthless palmetto lands will become of high value to the country.

THE Bridgeport (Ala.) Lumber Co. are making many improvements to their extensive plant, and are preparing for large fall trade, which is fully warranted by the present encouraging outlook. They have erected a standpipe seventy feet high, and a tank on top of which is twelve feet in diameter and sixteen feet deep as a protection against fire. The company is also extending their shed on the north side of the mill to enable them to load under cover direct from the dry-kiln. Other extensive additions to plant are also in progress.

Handling Cinder by Steam Shovel.

For some years past the Dayton Coal & Iron Co., Limited, of Dayton, Tenn., has been carrying the cinder from two furnaces in a Weimar fluid cinder car and pouring it over a dump on one corner of the furnace property along the Cincinnati Southern Railroad. The cinder in flowing out makes a series of layers about an inch thick, which upon cooling are intersected by numerous cracks caused by contraction.

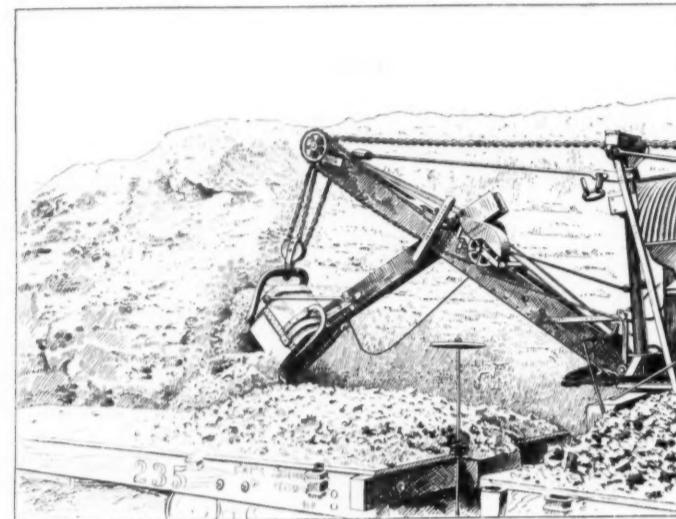


FIG. 1.—HANDLING CINDER BY STEAM SHOVEL.

Layer after layer has been made until now the pile covers nearly five acres of ground and averages over fifteen feet in height. Cinder in this condition forms a most acceptable ballast, and the railroad made arrangements with the Dayton company for using it, agreeing to load it themselves and pay the latter company twenty-five cents per car for all they took. A side track was put in against the cinder bank and a force of men set to work digging it out and loading. The work was slow and expensive, costing, with the price paid for the cinder, over two dollars per car.

While this work was going on one of the

Fig. 1 shows the shovel about a-third way up its stroke. The cinder is hard to start out, and sometimes where the teeth on the edge of the bucket take too deep a hold it makes the car jump up and down on the track, but finally pulls through and brings away a bucketful of cinder, besides knocking down much more, which is taken up in the next load. When too much falls into the bucket the operator pulls a rope attached to the catch holding the bottom in, and thus empties it. Almost instantaneously the bucket is lowered, takes up as

much as is wished and swings around to the car, where it is dropped.

Fig. 2 shows the bucket in the act of discharging while the crane is still in motion, swinging from the bank; the catch is pulled and the load distributed along the car wherever the operator wishes.

The absolute control which the operator has over the movements of the bucket enables him to bring a steady pressure under any large lumps and break them up without unduly straining the machine. In this way a part of the bank is often loosened and broken up, after which the bucket can be run up through it and filled.

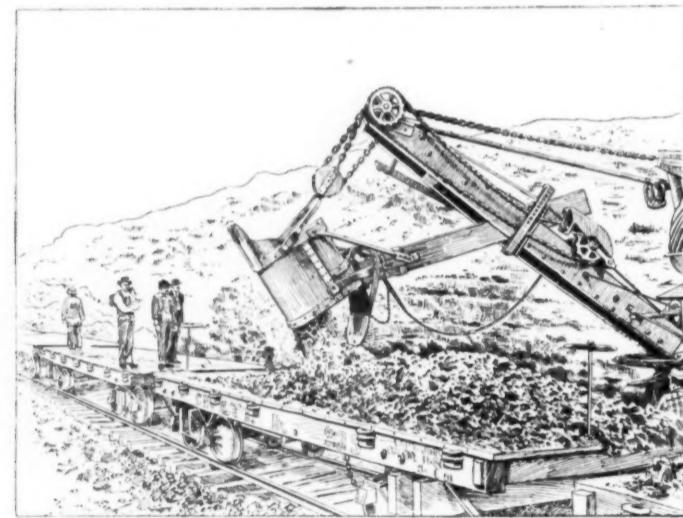


FIG. 2.—HANDLING CINDER BY STEAM SHOVEL.

firm of Flemming & Jenkins, contractors, visited the place and soon after entered into a contract with the railroad to load the cinder for one dollar a car, the railroad paying the Dayton company the price of the cinder, thus making the total cost on cars \$1.25.

The contractors secured a Barnhardt steam shovel, style "A," from the Marion Steam Shovel Co., of Marion, Ohio, and commenced work. The accompanying illustrations from instantaneous photographs taken during a recent visit to the place show the character of the cinder bank and the shovel in operation.

The average time taken in loading a car is five minutes, though several times it was done in less than three minutes. At the former figure the capacity of the machine working on this cinder bank is about 110 cars a day, with allowance for the time taken for shifting. Each car holds about ten tons, making the amount of material handled over 1,100 tons per day, or about 1,200 cubic yards. An engineer, fireman and two laborers are employed, the total wages being about eight dollars per day, or 72 1/2 of one cent per ton of material. Adding the cost of coal, repairs, interest, etc., the entire cost of handling does not

probably exceed \$22 per day, or two cents per ton of material.

An engine with a train of empty cars stands on the side-track, and as quickly as one car is loaded another is drawn forward and so on until the train is loaded.

This class of work is about as severe a test of the capabilities of a steam shovel as would be met with in any class of work. While the cinder is made up of thin layers and full of small shrinkage cracks, it is tough and springy, requiring rather a blow than mere pressure to move it. Near the top of the bank the prongs catch under, raise and break up a considerable surface, but below it must be scraped off, and the rapidity and comparative ease with which this is done is surprising.

In digging earth, where all conditions are favorable, this machine has a record of over 2,500 cubic yards per day of ten hours, and in ordinary material it will average about 1,000 cubic yards with good attendants. In loose rock and hard pan the capacity varies from 500 to 1,000 cubic yards, according to circumstances. These figures are given by the makers of the machine, and the record on the Dayton cinder bank shows that they figure on a most conservative basis, and have underrated the capacity rather than otherwise. The cinder would be classed about the same as a medium hard pan, though in some respects it is more difficult to handle.

Pocahontas-Flat Top Field.

[Condensed from Census Bulletin No. 200 by Joseph D. Weeks.]

II.

Coking Operations.

Inspect on of the analysis of Flat Top coal does not warrant the belief that it is a good coking coal. While low in ash, it would be regarded as too low in volatile matter to agglutinate properly, typical analysis showing only 18.812 per cent. as compared with 30.107 per cent. in Connellsville coal. While it makes an excellent coke when burned as "run of mine," the coke is greatly improved by having the coal specially prepared by crushing. When run of mine is charged, the lumps frequently come out of the oven simply charred, the volatile matter being driven off and the bond of the coal entirely broken. This charred coal is known locally as "roasted coal." Notwithstanding this lack of volatile matter, the coal makes a most excellent coke, not as bright as Connellsville, possibly more friable, but, having more fixed carbon, furnishing a first-class furnace fuel, capable of carrying in the furnace as heavy a burden as Connellsville and being much lower in ash.

The coking process is carried on at the expense of a considerable portion of fixed carbon. To make a ton of coke requires at least 1.6 tons of coal, containing, on the basis of 72.708 per cent. fixed carbon, 116.33 units of carbon. In other words, as the coke contains only 91.50 units of fixed carbon, there has been a loss of 24.83 units of carbon in the coking process, or more than one-fifth of the fixed carbon contained in the coal necessary to make a ton of coke.

In coking Connellsville coal little or no fixed carbon is lost, or if it be burned its loss is made up by the carbon from the volatile matter, so that in this coke there will be found more carbon than the total fixed carbon in the coal. The practice with the Flat Top coal should certainly be better than it is at present and the percentage of coke obtained greater. More satisfactory results no doubt will be secured through improvements in preparing the coal for coking and through other improvements to be made in the ovens and in coking methods.

The ovens used in this district were, without exception, the beehive. Some experiments have been made in coking in

the Sodenhoff-Coppee oven, but, though admirable results were obtained, the oven has not been introduced into this district. The earliest ovens built were eleven feet and eleven feet six inches in diameter, and from 5.5 to seven feet high; all those recently constructed are twelve feet diameter and seven feet high. All ovens on the Elkhorn are the larger size. Some ovens on the Welsh plan, long and narrow, have been introduced, and, it is said, good results obtained.

The cost of a bank or block of ovens varies with the nature of the ground and consequent amount of grading to be done. An estimate of the cost per oven of a block of 100 ovens is, for double block, including rail on top of ovens and larry, each \$375; without larry, \$350. The cost of block ovens, including grading, wharf, laries, tipple cars, etc., is placed at \$450 each. The average value of 1,833 ovens is, as given, \$359 each. The actual cost of a block of 100 ovens, built in 1889, not including mine cars, was \$43,600. The bricks used are chiefly Mount Savage and Black Lick, which were delivered, in 1889, as low as \$27 per 1,000.

The first ovens erected in this field were those built by the Southwest Virginia Improvement Co. at Pocahontas in 1883. The first in the Bluestone region were built in 1886 and in the Elkhorn district in 1888. The number of ovens built and building at the close of 1889 is shown in the following table:

COMPANY.	No. of Ovens.		
	Unit.	Building.	Contemplated.
Pocahontas district - Southwest Va. Improve't Co.	400	250	...
Bluestone district.....	578	150	170
John Cooper & Co.....	10	...	
Caswell Creek C. & C. Co.....	137	70	
Coaldale Coal & Coke Co.....	130	...	
Booth-Bowen C. & C. Co.....	91	...	
Buckeye Coal & Coke Co.....	100	...	
Goodwill Coal & Coke Co.....	50	50	
Louisville Coal & Coke Co.....	50	50	
Elkhorn district.....	855	231	530
Elkhorn Coal & Coke Co.....	100	...	
Shamokin Coal & Coke Co.....	100	50	
Norfolk Coal & Coke Co.....	100	50	
Lick Branch C. & C. Co.....	120	...	80
Turkey Gap C. & C. Co.....	100	...	50
Crozer Coal & Coke Co.....	170	46	...
Houston Coal & Coke Co.....	100	...	50
Powhatan Coal & Coke Co.....	65	35	50
Lynchburg Coal & Coke Co.....	100	...	
Algoma Coal & Coke Co.....	100	...	
Gilliam Coal & Coke Co.....	100	...	
Total of all fields.....	1,833	631	700

In 1883, 1884 and 1885 the total number of ovens in the region was 200. In 1886 this was increased to 210 by ten ovens built in the Bluestone district; in 1887 more ovens were built, bringing the total to 684; in 1888 this was increased to 1,282, and in 1889 to 1,833.

The charge of coal for a 12 foot oven is about 9,000 pounds for 72-hour coke, and 8,000 for 48 hour coke. About 175.650 pounds of coal from the Bluestone district were sent to the Coppee ovens in the New River district and there coked. Of this amount 46,850 pounds were "run of mine," the rest being slack. Five tests were made, the charges being from 2.5 to 3 tons, the number of ovens charged from 4 to 9, and time of coking 24 to 48 hours. The average yield was 67.5 per cent. The coke burned 36 to 48 hours proved the best, being bright, regular, compact and uniform throughout.

Great difference of opinion exists as to the yield of coal in coke. This is generally placed at 62.5 per cent., or 1.6 tons coal per ton coke, though at some works the yield is only from 54 to 60 per cent. One operator expresses the belief that the yield did not reach 53 per cent. The consumption of coal in the district was 517,613

tons, producing 321,686 tons coke, an average yield of 62.15 per cent., though it is evident that these figures are estimates.

The wages paid to drivers is from \$1 to \$1.25 per day, chargers \$1.20 to \$1.50, levelers 8 cents per oven and \$1.20 to \$1.50 per day, loaders \$1.20 per day, laborers \$1.17 to \$1.20 per day, and drawers 50 to 58 cents per oven and \$1.25 per day. Charging costs from 4 to 5 cents per oven, leveling 8 cents, drawing and loading 50 to 58 cents, loading from wharf to cars 10 to 12 cents a ton, cleaning out ovens 1 to 2 cents. There is a wide diversity of opinion among the operators as to the cost of coke, the figures given ranging from \$1.35 to \$1.75 per ton. This is largely due to the difference in opinion as to the price at which the coal should be charged to the ovens. Charging the coal to the ovens at cost, which is 62.5 cents per gross ton or 55.8 per net ton, the cost of coking will stand as follows, a charge of 8,000 pounds and yield of 62.5 per cent. being assumed:

Items.	Per ton (2,000 lbs.) coke.
Charging.....	2.0
Leveling.....	3.2
Drawing.....	30.0
General labor.....	2.5
Cleaning ovens.....	1.0
Supplies and repairs.....	7.0
Total.....	35.7

Assuming that the coal costs, not including royalty, 62.5 cents per ton of 2,400 pounds or 55.8 cents per ton of 2,000 pounds, and that it requires 1.6 tons coal per ton coke, the cost of a ton of coke based upon the above figures would be:

1.6 tons coal at 55.8 cents.....	\$0.8928
Cost of coking.....	0.3570
General expense.....	0.0550
Ro. alty (15 cents on 2,400 pounds).....	0.1340
Total.....	\$1.4338

A statement made from the returns received shows a higher cost than this, the average for 321,686 net tons coke being \$1.612 per ton.

The following analyses of Flat Top coke serve to show its composition. No. 1 was made at Pulaski furnace; No. 2 is a sample from the Bluestone district, and No. 3 an average of three samples by McCreathe:

Composition.	No. 1. Per ct.	No. 2. Per ct.	No. 3. Per ct.
Moisture.....	0.700	0.664	0.347
Volatile matter.....	1.270	1.059	0.757
Fixed carbon.....	91.430	92.816	92.550
Ash.....	6.090	4.913	5.749
Sulphur.....	0.59	0.548	0.597

The total capital reported in the manufacture of coke in 1889 in the Flat Top region was \$744,576. Several causes have combined to make this capital unusually small. These causes grow out of tenure of land and the peculiar methods of manufacture and disposal of the product. The

SHIPMENTS OF COKE FROM THE FLAT TOP DISTRICT.

DESTINATIONS BY GROUPS.	1887. Cars.	1888. Cars.	1889. Cars.	1890. Cars.
To points on Norfolk & Western Railroad.....	4,324	6,715	9,001	9,092
To points on Shenandoah Valley Railroad.....	1,650	379	494	3,436
To points on other railroads of Virginia.....	33	14	13	19
To points north of Hagerstown and Shenandoah Junction.....	1,275	2,717	6,127	9,143
To points south of Bristol.....	13	11	13	133
To points in North and South Carolina.....	525	71	65	65
To Chicago, Ill.....	633	577	660	56
To East St. Louis, Ill.....	65	54	51	51
To Louisville, Ky.....	84	...	...	1
To Joliet Ill.....	3	...	...	...
To Terre Haute, Ind.....	...	...	...	...
To Centralia, Ill.....	...	...	1	...
Total number of cars.....	8,605	11,095	15,983	20,831
Representing total tonnage of.....	151,171	302,868	310,504	433,527

value of the plants is placed at \$707,463 and live capital at \$37,113. The value of the buildings, machinery, railway plant and water supply seems quite small in view of the magnitude of the operations, but it must be remembered, in considering these figures, that coking is only an adjunct to the production of coal for sale in the general market. The larger portion of the value of the buildings, etc., is charged to coal. The same condition of affairs will be apparent in discussions regarding live capital, wages, etc. The total amount of

live capital was \$37,113 at the close of 1889. Of this sum, \$675 represents raw material and supplies on hand, \$3,045 stock in process of being worked up and finished products, and \$33,395 cash on hand, etc.

All of the coal used is slack from the coal-mining operations in this field, and this amounted in 1889 to 517,613 short tons valued at \$302,742. The material used in addition to this has but small value. It is chiefly wood for preliminary heating of the ovens and barricading the doors of cars when shipments are made in stock or box cars. In addition to wood, fire brick and red bricks for repairs, tools for leveling and charging are employed to some extent, and certain materials are employed in repairing the laries and other machinery about the works. The amount used, however, is small, amounting to but \$8,913.

The total average number of persons employed at coke works in this region during 1889 was 533, receiving \$149,727 in wages. These were divided into seventy-four foremen, superintendents and skilled labor, receiving \$31,325; seven officers or firm members, receiving \$4,562; four clerks or salesmen, receiving \$1,520; 278 unskilled workmen, receiving \$62,053; six children, receiving \$630, and 164 piece-workers, receiving \$49,637. In considering the wages of superintendents, clerks, etc., it must be remembered that many of them occupy dual positions and are employed in the production of coal as well as the manufacture of coke. Payments are made monthly, generally on the 20th, for the work of the preceding month. Nearly all the works in the region have stores connected with them, from which the operatives are supplied, though, so far as has been learned, they are not compelled to buy at these stores unless they so desire.

Without exception the hours of labor in the region are ten the year round in the case of day laborers. In some cases the miners work less hours, as they are paid by the ton and may get out what is regarded as a day's work in less time than this. During 1889 the employment in the field was so irregular that it is not possible to tabulate the number of days employed.

The notable feature about this distribution is the great increase in shipments to points south of Bristol, Tenn. These shipments increased from 1,275 cars in 1887 to 6,127 cars in 1889, 380 per cent. This indicates that the furnaces of Chattanooga, Florence, Sheffield and other points in Tennessee and Alabama are using Virginia coke in advanced percentage. The increase in the use of Flat Top coke at points south of Bristol has been much greater than that on the Norfolk & Western Railroad in Virginia. Virginia has

only about doubled its use, while points south of Bristol use nearly five times more. In 1887 points south of Bristol used only about one-seventh of the total production of coke in the Flat Top region, and Norfolk & Western points one-half; in 1889 the former took about 39 per cent. and the latter about 56 per cent., these destinations receiving about 95 per cent. of all the coke made in this district.

A NEW planing mill has been completed and put in operation at Thomaston, Ga.

LUMBER.

[For lumber market reports see pages 135, 136 and 137. In the Construction Department, on pages 138 and 139, will be found a complete record of new mills and building operations in the South.]

Southern Pine in Great Britain.

LONDON, August 29.

Editor Manufacturers' Record:

Facts are more difficult to obtain in England than in America, but, when gotten, may be more safely trusted. I find English timber merchants distribute their information sparingly. Nine interrogation points miss their aim where one brings the bird. However, I have gleaned enough to fill one letter.

The market for long leaf yellow pine is steadily growing in Great Britain. Hitherto they have bought our yellow pine trees hewn and of the largest sizes and longest lengths to be had. What sawn lumber they have taken from us has usually been of large timbers which they resaw to fit their own uses. A small proportion of 3 and 4 inch deals running from nine to fourteen inches wide have generally been put in to fill up the cargo of larger timbers, with sometimes a limited quantity of 1 and 1½ inch boards. The English timber dealer and woodworker have both bought upon the idea that the trees must be reworked at the point of consumption. This condition of things is slowly changing, and in the change rests our hopes for better prices.

Now importers of Liverpool and London are making occasional purchases of yellow pine dried, dressed and matched in America. The difference in the prices paid for large timbers and the worked boards is greatly out of proportion to their intrinsic relative value. For example, hewn and sawn pitch pine is worth in the English market to-day from \$22 to \$32 per thousand superficial square feet, while for flooring and ceiling, dried, tongued and grooved, they pay from \$35 to \$45 per thousand. Here the difference is from \$6 to \$12 per thousand in favor of the finished lumber, while in America the drying, dressing and matching only costs the manufacturer from \$2 to \$3 per thousand.

The demand for hewn and sawn large timbers takes almost every size in length from 3x9 up to the largest piece a tree will make, running from fourteen feet up to seventy feet. The longer the average the better the price. In boards rough the English market prefers 1, 1¼, 1½ and 2-inch stuff, running from eight to sixteen inches wide, 13 and 14-inch widths being in greatest demand. The dealers here only want our best. There is but little inquiry for any grade less than what is known as "Savannah prime."

Below I give an extract from a price current issued August 2 by a prominent Liverpool firm of brokers. I have reduced the English quotation per cubic foot and in shillings and pence into superficial square feet and dollars and cents for ready comprehension:

Per 1,000 feet.
Hewn pitch pine..... \$25 00@ \$31 00
S. w. pitch pine..... 25 00@ 36 00
Prepared pitch pine flooring..... 27 50@ 30 00

It should be understood that prepared pitch pine flooring does not mean dried, dressed or matched, but simply rough green pieces cut to sizes ready for the planing machine. The additional prices for the dried, dressed and planed stuff is from \$5.00 to \$7.50 over and above the last-named quotation. It is well for the reader to bear in mind that all of our Southern yellow pine is called in this market by the one name of "pitch pine." The English term yellow pine covers all that species from Michigan and Canada known to us as "white pine."

The timber business of England is handled almost exclusively through large commission houses. These houses furnish to the manufacturer or exporter the sched-

ule of sizes and grades to fill a ship, some to be loaded and shipped by a certain date. Pending shipment of the cargo the commission house submits a copy of the schedule of the forthcoming consignment to the dealers throughout Great Britain. Before the ship has arrived the dealers have placed their orders for such parts of the cargo as each may need if the prices are satisfactory. The commission man instructs the exporter to make drafts on the dealers or dealer who takes the cargo at sixty days or four months at the price paid for the same by the said dealer or dealers. The exporter attaches the draft or drafts to the vessel bill of lading and draws on the English commission merchant for the full amount of the cargo, after deducting the guaranteed rate of freight and such other expense as comes out of the exporter under the contract. The commission merchant honors a sight draft covering the entire cargo, less the interest, for the sixty days or four months at 5 per cent. In this way the exporter receives cash, less the interest, and extends the credit to the dealer. The commission merchant's charge is 4 per cent. on the gross delivered price

products of its own colonies to those of the United States, all things else being equal.

Below I quote the opening paragraph of the approved form of pitch pine charter of the committee of Liverpool Shipowners' Association. The remainder of the charter is after the general form of American rail way bill of lading, with such general provisions as the conditions of American commerce demand:

It is this day mutually agreed between....., of the good ship or vessel called the....., of the burthen of.....tons register or thereabouts, now at....., and....., charterers, that the said ship, being tight, staunch and strong and every way fitted for the voyage, shall, with all convenient speed, sail and proceed to....., and there load at such safe anchorage and or wharf as charterers or their agents may direct (where the ship can lie always afloat, giving written notice three clear running days before cargo is required, after being at such anchorage or wharf ready for cargo), a full cargo to consist of square pitch pine, sawn and or hewn pitch pine timber, at merchant's option; merchants to supply timber and or deals and or boards at their option for beam fillings and broken stowage, but not more than required by the master—deck load, if required by the master, to be supplied at full freight; no timber or deals or boards to be cut without the written permission of the shippers,

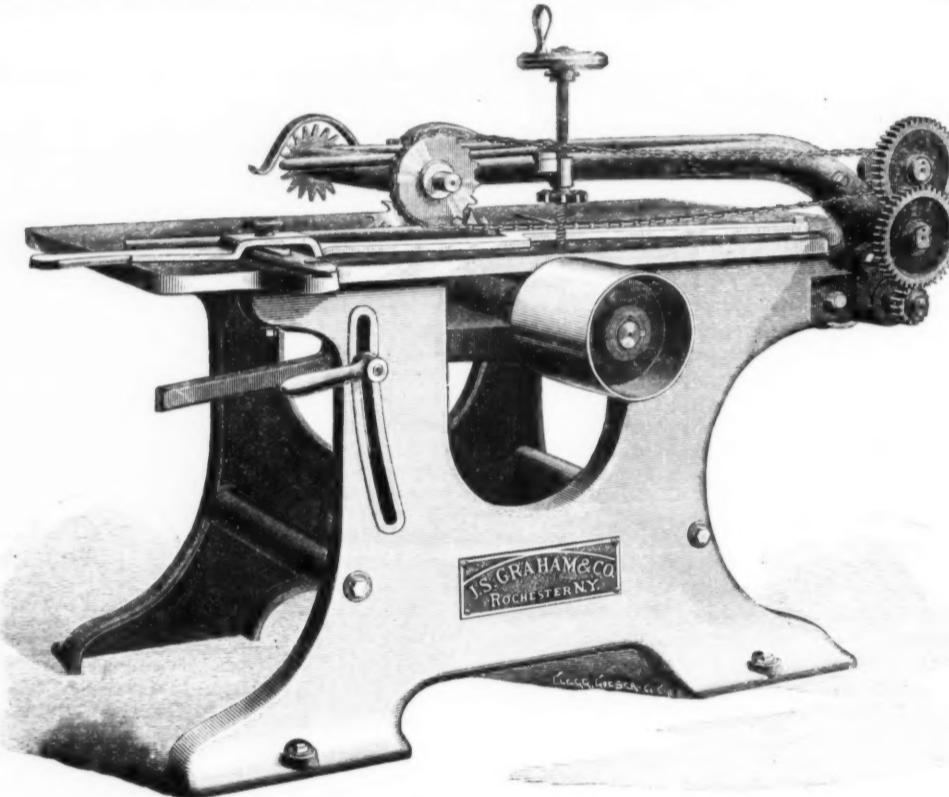
Should any dispute arise in regard to any matter in connection with this contract, the buyers shall not reject the goods nor refuse an acceptance, but shall make due payment as herein agreed, but such payment shall not affect the right, if any, to claim compensation for any breach of this contract by the sellers; no claims to be made or entertained on any parcel broken into or after fourteen days from its being landed.

It is likely that at some near day it will become the custom for the European buyers to send their own inspectors to the American ports and make a final inspection as the lumber passes into the ship. At least we continue to hope so.

The present freight rate prevailing from the Gulf and South Atlantic ports by sail or steamer is from \$11 50 to \$12 50 per thousand to British ports.

The shipbuilding interests on the Clyde river are more depressed now than at any time for the past twenty years. English merchants and ship-owners advise me that here is a wave of stagnation throughout the British colonies all over the world as well as in the mother country. No better explanation is given than that it is a periodical ebb in the tide of commerce.

C. J. HADEN.



SELF FEED SAW TABLE

Self-Feed Saw Table.

The machine shown in the accompanying illustration is designed to do all kinds of ripping up to sixteen inches wide, six inches thick, and will be found to do it better, faster and more easily than the ordinary hand ripping saw table. Recognizing the fact that the numerous self-feed saw tables, as now designed and constructed, are extremely light and weak for the purpose, the makers have carefully avoided all such defects, and in their design and construction have studied to combine with their late improvements the elements of great strength, durability, simplicity and perfection, and the results prove that they have succeeded in a high degree.

The machine is built of iron and steel throughout. The frame is large and heavy, and the iron table of large size and fitted with a heavy arbor that can be raised or lowered for the purpose of removing saw, etc., without disturbing the same, thereby having the advantages of a table that is fixed and true at all times. The saw gauges are of an improved pattern, and can be instantly set to any desired width.

of the cargo, besides the interest on his money advanced. As the per cent. which he charges for the advance is in excess of the usual banking rate of England, the commission merchant makes a snug profit on the loan. 4 per cent. commission on lumber at \$30.00 per thousand upon a cargo say 1,000,000 feet aggregates a neat round revenue. One commission house in Liverpool made a comfortable fortune out of the shipments of one manufacturing firm of Pensacola, Fla., so I am informed. However, where the commission merchant made one dollar the Pensacola people probably made three.

Pitch pine is steadily growing in favor for indoor finish in the best houses. It ranks next to the rare woods of Central America in the estimation of London home-builders. White pine from the shores of the Baltic sea being the cheapest lumber in the British markets, is therefore most generally used for the construction of cheap or tenement houses. A considerable quantity of pitch pine is being used now in building the decks of sailing ships. However, the Canadian pine is preferred for this purpose, and it is always safe to say that the English trade prefers the

The feed works are strong, simple and reliable, and can be quickly adjusted to any desired thickness, or can be removed entirely for the purpose of hand-ripping or cross-cutting.

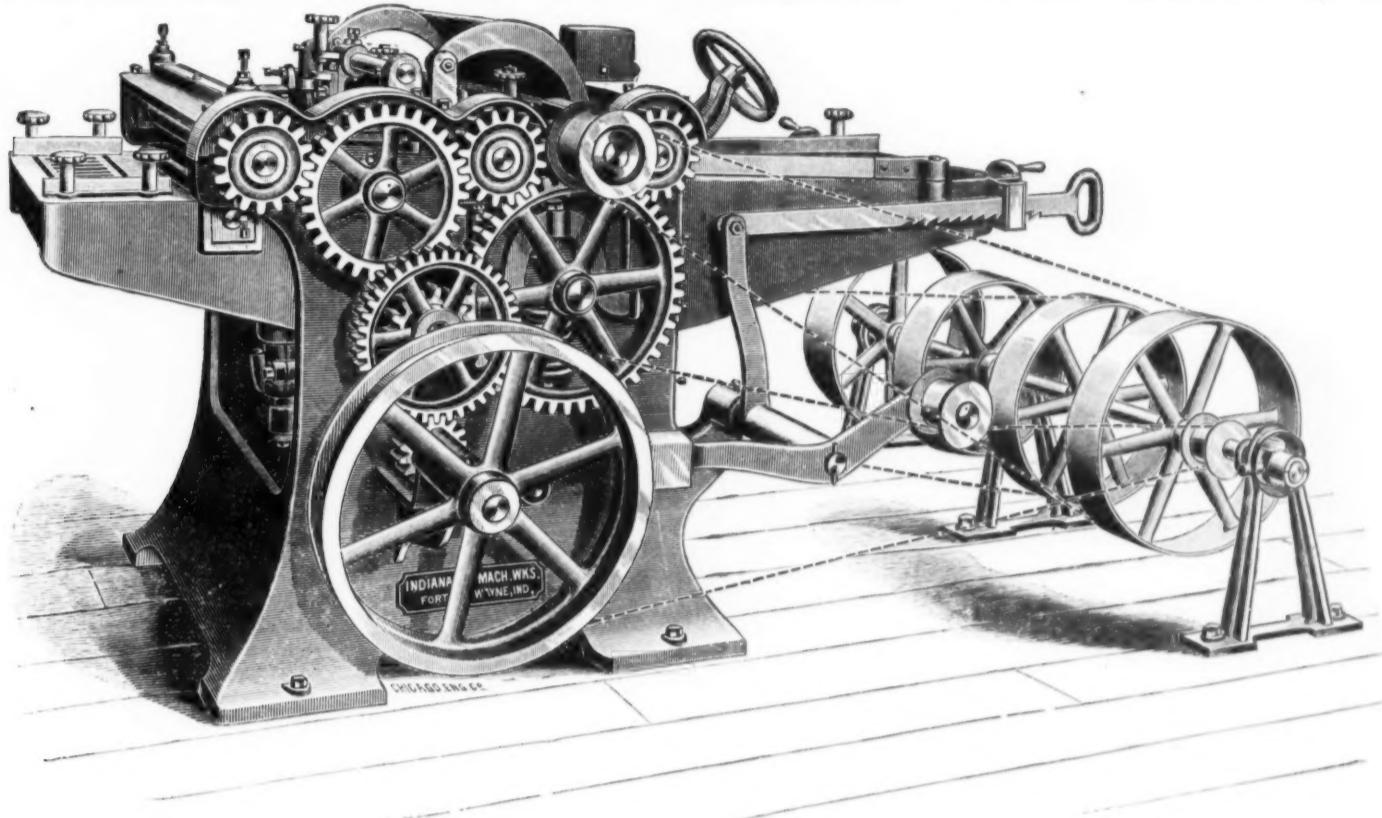
One important feature about the machine is that it provides for the removal

The cylinder is forged from a high-grade of crucible steel, is belted at both ends, and runs in long bearings lined with genuine Babbitt, and provided with their improved self-oiling cap, which is a positive guarantee against burning out of boxes. The head is four-sided, slotted on two sides,

with the aid of a small hand wheel on the front end of bed, move both matcher-heads and the guide across the bed simultaneously and without affecting the space between the heads; by this means the heads may be shifted to any part of or across the bed very quickly and without any trouble,

turn with scrapers and oil-holders, thus preventing the accumulation of pitch and tar upon the rolls. The gearing is cut from solid iron, thereby avoiding the noise and back lash incident to the cast gears.

The chip-breaker in front of the cylinder is very heavy, rests solidly on the lumber,



NO. 1 CLIPPER PLANER, MATCHER AND MOULDER.

of the feed works instantly without the use of bolts, nuts, etc., and leaves a perfectly clear table without any obstruction. The saw is covered with a shield to prevent accidents. The machine is furnished with a lever shifter for ripping gauge, by which the gauge can be adjusted instantaneously to any desired width. The rates of feed are fifty, ninety and 130 feet per minute. The arbor pulley is eight inches diameter, 8-inch face, and should be speeded to suit the saw. One 14-inch rip saw is furnished with each machine, and a new sliding attachment for cutting clap boards, etc., can be furnished at a small additional cost. The makers are J. S. Graham & Co., Rochester, N. Y.

No. 1 Clipper Planer, Matcher and Moulder.

The engraving herewith represents the No. 1 Clipper planer, matcher and moulder designed and perfected by the Indiana Machine Works, Fort Wayne, Ind., with a special view to meet the demands for a medium and combined machine at a small cost, and embracing the valuable features of the most expensive tools, together with easy adjustment, simplicity and some new departures. For convenience of adjustment, strong and fast feeding, smooth planing and excellent workmanship, it is claimed to be unequalled by any machine of its class on the market.

The frame is heavy, wide at the base and cast in one piece, thereby securing strength, rigidity and stiffness not possible to be attained when the frame is bolted together. The bed is very long, is also cast in one piece, and is fitted into the frame between long, heavy guides which are provided with gib and adjusting screws on front end of frame, so that any wear may be easily taken up and a perfect fitting bed retained at all times; the entire bed, with matcher heads, is raised and lowered by large hand wheel shown in cut, the indicator, in very convenient position, showing the exact thickness the machine is set to plane.

thus admitting the use of beading, patent siding and molding cutters at any point desired to suit the nature of the work; no extra attachments required. The chip breaker and pressure bar are adjustable to and from the cylinder, so that a molding cutter projecting seven-eighths inch beyond the lip of cylinder may be used without removing these parts.

and thus wear the platen and knives more evenly; one head may be as quickly adjusted independent of the other. The matcher-heads may be entirely removed, for wide surfacing, by loosening one set screw. The spring that holds the lumber to the guide is also adjustable to and from the guide by means of a small hand wheel at the front end of the bed, and may be

and is self-adjusting to the different thicknesses of cut. The pressure bar behind the cylinder may, by means of adjusting screws be set to rest solidly on the lumber while the machine is in motion.

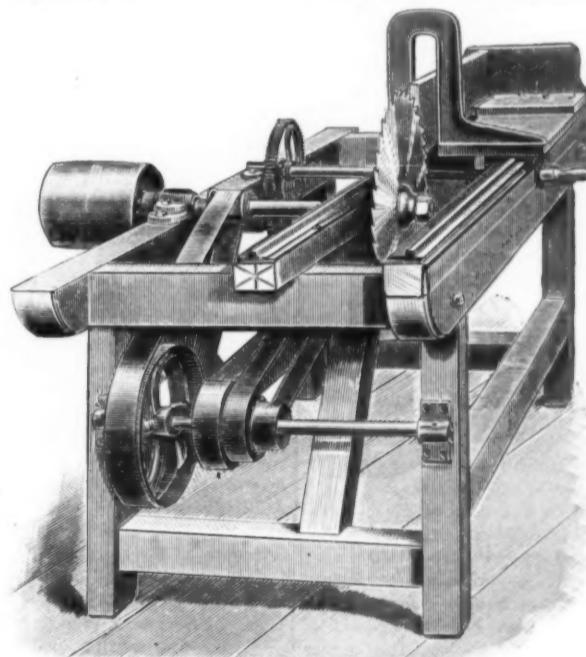
The machine will surface up to twenty-five inches wide and six inches thick; will match up to 12½ inches wide and two inches thick. It has two feeds, thirty-five and sixty lineal feet per minute. Tight and loose pulleys on countershaft are 10x16, and should make 900 revolutions per minute; weight of machine about 3,000 pounds.

Self-Feed Shingle Machine.

The accompanying cut illustrates a new and improved self-feed shingle machine, made by Wheland's Foundry and Machine Works, of Chattanooga, Tenn. This machine has been greatly improved by having the table stiffened by means of a cast-iron yoke, shown in the cut, and four wrought-iron gibbs attached to the under part, and planed to fit the ways on the frame. The ways are also planed to fit the gibbs on top and underneath to allow the table to slip thereon and firmly hold it on the ways.

A self-acting trip disengages the feed the instant the cut is made, allowing the weight to bring the table back. All the operator has to do is to rock the block with his hands and throw in the gear, which can be done with his foot. Riven blocks can be squared with the machine. The mandrel has an 8x8-inch pulley and is calculated to make 1,500 revolutions per minute for general work. All inside belts, a wrench and one 24-inch saw are furnished with each machine. The capacity is 5,000 to 8,000 shingles per day; weight 400 pounds.

MR. CHAS. W. STANTON is endeavoring to arrange for the immediate rebuilding of the Turner & Oates saw mill which was recently burned near Mobile. Mr. Stanton had only recently bought this mill and expended \$3,500 in general repairs. The plant is valued at \$50,000.



SELF-FEED SHINGLE MACHINE.

The matcher spindles are of the best cast steel, running in self-oiling boxes and fitted with their improved step, which is easy of adjustment and self oiling. The matcher-heads are cast of the best gun metal and fitted with their improved chip-breaker, which prevents splitting out in cross grained and knotty lumber. By a very ingenious device the operator may

moved to the side and out of the way when using the full width of the machine for surfacing only. No wrenches are required.

The machine has six large feed rolls (two feeding out rolls), with steel spindles running the full length; the feed is very powerful and is instantly stopped or started with a perfectly balanced tightener. The rolls are provided with covers, and these in

Double Endless Bed Surfacer.

The accompanying illustration shows a 26-inch double endless bed surfacer made by the Bentel & Margedant Co., Ham Iton, Ohio. The makers of these machines claim that they have successfully solved the construction of endless beds and that this feature is one of the strongest points of their surfacers. They guarantee that there is no faulty wear or cutting of the sliding surfaces, either of the traveling bed or the slides on which it travels.

Referring to the illustration, which shows in the front one of the series of slats comprising the traveling bed, it will be noticed that the form and design of the slat is novel, being a slat strengthened by a hollow cored supporting brace, starting from

that an uneven wearing or a rocking motion of the slat or bed, as is the case with planers having three or four supports, cannot take place.

The wider planers are supplied with stronger-braced slats and broader-sliding faces and rails, but all the rails on which the endless bed travels are made full thickness of the finest tool steel, hardened to a degree accomplished only by special process. They are carefully ground by special machinery on top and bottom to a perfectly true and straight line. Thus arranged, they will never cut or wear irregularly, but will soon assume a wearing finish known as "looking-glass" finish, a surface offering only a slight resistance to the sliding pressure of the traveling bed.

These double endless bed surfacers are

material up to sixteen inches in thickness.

The cutter cylinders, to which the manufacturers call special attention, are provided with fine steel journals eleven inches long, and are of the well known triangular shear knife pattern made by this company. The cutter cylinder is shown in a separate illustration. It is provided with three knives placed at such an angle as to produce a shearing or draw cut, thus preventing any splintering or tearing. It is supplied with a driving pulley of large diameter on each end with momentum disks. The swinging bonnet forms at its lower side a well-arranged chipbreaker, situated very close to the cutting line. It swings very conveniently out of the way for sharpening the knives and other purposes. Two heavy-weighted idler rollers are connected

operating with the lower head. Graduated scales, conveniently placed, show at a glance the position and height of parts adjustable for various thicknesses of material.

If the planing of strips of irregular thickness is required, there is supplied for the purpose, at a small additional cost, the Brown differential sectional feed roller, illustrated in the small cut. It consists of a series of sections, each yielding independently of the other to irregularities in thickness. For many kinds of work this arrangement is of importance, as a number of strips can be fed along side by side, regardless of thickness in the rough.

The carrying out feed-rollers (when provided) are placed in the rear of the lower cylinder. They are six inches in diameter,

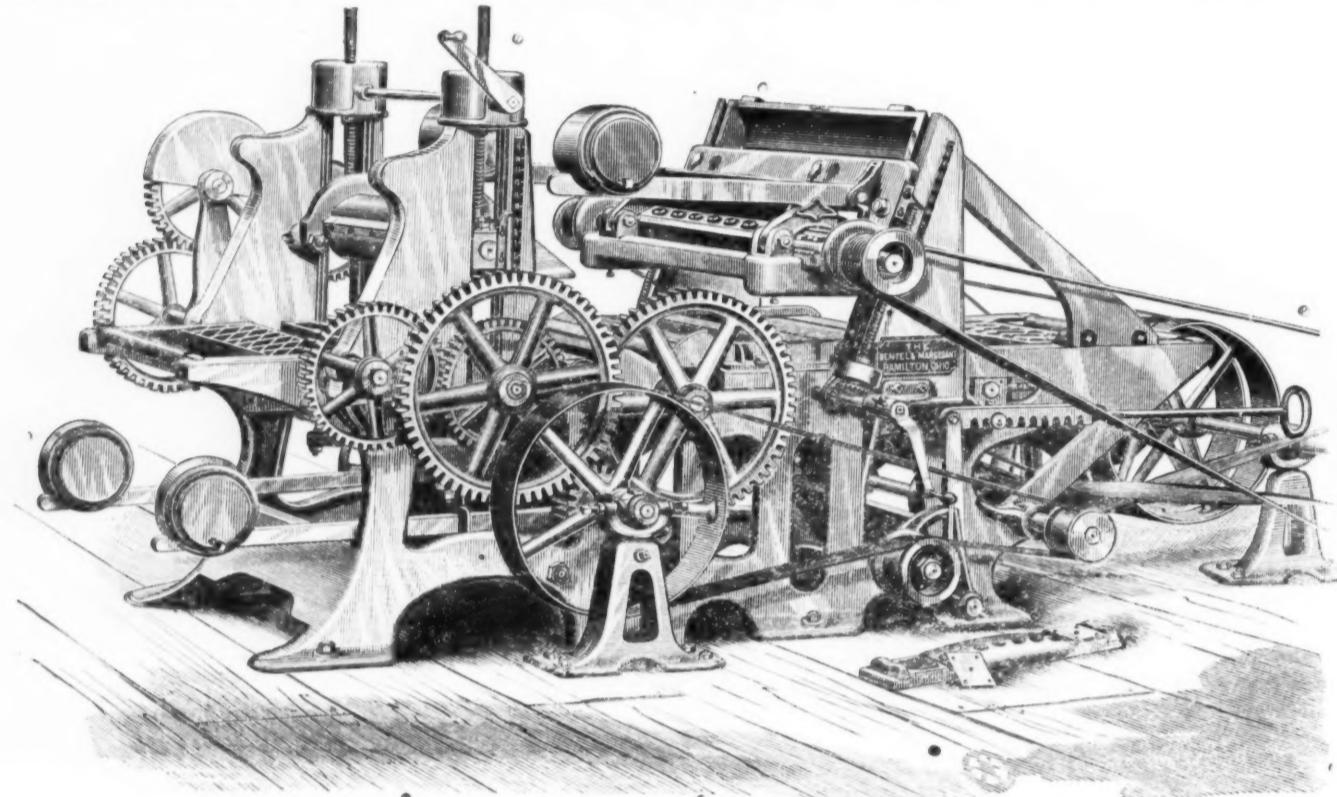


FIG. 1.—DOUBLE ENDLESS BED SURFACER.

the ends and increasing in proportion toward the middle, all cast in one piece. One of the ends of the slat shows it with the plate removed, exposing a recessed chamber, which is filled with cotton fabric for carrying a quantity of lubricating oil. The other end of the slat shows this chamber covered by a hard cast-steel plate provided with five holes. The centre hole is an oil-hole, and the four others for rivets to fasten the steel plates to the slats.

Every slat is "faced" with a hard cast-steel sliding plate, which is removable should there be occasion for it. Every

provided with geared carrying-out rolls. These machines are made in three sizes, to plane twenty-six, twenty-eight and thirty inches wide, and are arranged with or without geared carrying-out rolls as desired, and with one or two cutter cylinders.

The frame of the machine is built very massive and strong, with a broad rest on the floor. The connections and binding braces which hold the two sides together are made especially strong and heavy, thus forming an unyielding support for the traveling bed, which remains at a uniform height for all thicknesses of material. It

with the cylinder housing, one in front and the other in the rear of the cylinder. The pressure on these rollers can be regulated to suit the requirements of the material, as their office is merely to hold the material in close contact with the traveling bed. An adjustable scraper keeps the back roller free from gum and resin.

The lower cylinder is located at the back end of the traveling bed, and is especially arranged for quick adjustment. It rests in a strong combined housing, which retains the long, self-oiling journal bearings in accurate line. It raises and lowers upon long vertical slides provided with adjusting gibs by means of a crank wrench operating through worm gearing on two vertical screws, insuring simultaneous action and easy adjustment.

There are two adjustable tables, one in front and the other in the rear of the lower cutterhead. The one in front can be adjusted in line with the traveling bed. It is supplied with handles by which the whole table can be swung back out of the way, giving free access to the head. The table back of the cutterhead raises and lowers with the housing, so that it always remains in line with the cutting line of the cylinder. This table can, however, be adjusted for height if necessary, and can also be lifted entirely out of its bearings without the loosening of bolts or nuts.

An adjustable resisting pressure plate of large dimensions and arranged to adjust independently or in connection with the carrying-out feed rolls, at the will of the operator, holds the material firmly when

and, as the illustration shows, are very strongly geared with wide, heavy gearing. They are positive and powerful in action, and quickly adjustable for variation in material. They are well supported by bracing stands.

The lower feed-roller, though adjustable independently for height with the back table of the lower cutterhead, raises and



FIG. 3.—BROWN DIFFERENTIAL SECTIONAL FEED ROLLER.

lowers with the cutterhead and back table. Operators will see the importance of this combination, as much time and labor are thus saved in establishing the relative adjustment of these three important parts, which, in their machine, have a fixed relative adjustment, admitting of quick change for thickness of cut while the machine is in operation. The links of the expansion gearing are placed in such a position that they do not twist or retard easy motion.

MESSRS. BROWN BROS.' new woodworking factory at Ronceverte, W. Va., is partly completed, and considerable of the machinery has been put in position and started. The part now in operation is manufacturing small staves. The barrel stave machinery, which will have a daily capacity of 100,000 staves, is now being erected and will soon be put in operation.

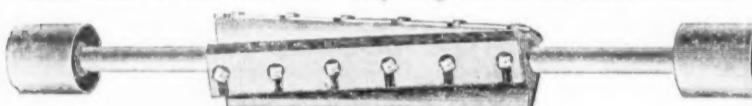


FIG. 2.—THE CUTTER CYLINDER.

slat carries its own permanent supply chamber of lubricating oil, from which the lubricant is uniformly and automatically discharged when needed, and being hollow, it equalizes the pressure of the air on the two close-fitting surfaces.

The steel plates used are not planed or milled to a uniform thickness, but are of standard sizes and measurements, as found in any steel warehouse, ground to a smooth surface after tempering. The rests for the steel plates are planed carefully to a uniform height, so that a renewing can be accomplished without the assistance of a machinist. All the various sizes of endless bed planers made by this company have only two supports for the endless bed, so

is claimed by the makers that this arrangement of a fixed bed insures positive strength of resistance, and freedom from trembling and jar, as the framework of the bed binds the machine firmly together. It also does away with the troublesome annoyance of raising and lowering the bed for different thicknesses of material, and with the unavoidable wear of the bedsides and raising screws, and with the rocking motion of the bed. The upper cylinder, with its heavy housing, raises and lowers on inclined dovetailed slides, supported by heavy stands, by means of the lower crank, shown near the belt-tightener. It operates through mitre gears on heavy raising screws, and the cutter head can be raised to plane ma-

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 139.]

The News of Wall Street.

OFFICE OF MANUFACTURERS' RECORD
No. 126 Liberty Street,
NEW YORK September 14.

This afternoon we are told that we have had cholera for a week. As a sequence—I cannot say consequence, for it was not generally known during business hours—up go the prices of stocks. It may seem far-fetched to the average business man to lay so much stress upon the effect of a pestilence upon values of commodities. Nevertheless the fact remains that these things are very much taken into account by the greater coteries of speculators and with good reasons already set forth. It is also a fact that during a fortnight prices of shares have had a very general and marked advance, and at the same time that the value of the amount of general imports has increased.

Two other conditions, showing what I have hitherto laid some stress upon in illustrating the improvement in general as contrasted with specific conditions, are the very pronounced and widespread growth in railway earnings and the large increase in manufactures of cotton goods. As to the first point, there seems no other cause than a widely distributed, and hence spontaneous, betterment of trade—of dealings between merchants and manufacturers on the one hand and consumers on the other. With regard to the second point, part of the increased production and demand in cotton manufacture has been the cheapness of the raw material. Certainly it has not hurt manufactures to be supplied with cheaper cotton, but rather has stimulated the mill-owners to pay more people wages and thus distribute more money. On the other hand, it has necessarily cheapened the product, and hence benefited those to whom the product is a necessity, even those who raised large crops at small prices being benefited in a measure, for they have to buy back part of their own raw material in its finished state, whatever may be the price, and they need not buy more when manufacturers' prices are down than when they are up, while the mere plethora of their own crop compensates in part for its lower price by the larger amount picked. This is also true of all natural products, like conditions being given, and they can nearly always be taken for granted. It is easy to regard overproduction and consequent weakening of price for raw material, whether grain or cotton or peaches or cider apples, as unfortunate if you ignore this very simple and evident law. I am sorry so many producers do, and lie awake o' nights fearing ruin because they have too great plenty.

Yet here is the cholera now enough "in our midst" to prevent the most extravagant literary purist from making a wry face at my using this much-tortured phrase. Let us now take notice of how far the scare that previous years' experience will undoubtedly induce, will affect our commerce inland and foreign. There is no doubt that this will be to a great extent, though we, that is to say, some thousands of us, know that cholera is getting quite out of date as a bugaboo if people are enlightened about it, but it is just as mediæval a scourge as it ever was among those ignorant of its real nature. These, it is to be confessed, however regrettably, are the majority. Hence, we may have what has already begun to threaten, State quarantines against other States, paralyzing both freight and passenger traffic on the railroads; a shutting off of foreign communication; even quarantines between neighboring cities. If the railroads have already begun to refuse to take to the West immigrants who have passed the excellent

quarantine precautions of this port, why shall we not expect that they will next quarantine New York against even Westchester county, and in case the epidemic declares itself in Baltimore, shut that city out from even its nearest neighbors? The effect of these things, according to my informants, who remember from having been here the terrible '40s, will be incalculable in its direct losses. If a whole city, nay, a whole country, look askance at oysters, fearing they may have cholera germs from lower New York harbor in them, is it any wonder that riots occur when the Normannia's perfectly well passengers arrive at Fire Island? What then if these things spread? We may get used to it and go on as if nothing much had happened. We surely might if all the people understood that danger can be minimized by popular understanding of how small the peril is to the individual.

It seems to-day that the Clyde party will control at the Richmond Terminal meeting to-morrow. This would bring about a marked shake up in the present board.

It will mean that Mr. Clyde and his friends will go ahead and try to do their own reorganizing without any outside intervention—perhaps Mr. Clyde would prefer to call it interference or even meddling. Perhaps it's just as well to let those most directly interested work out their own salvation—let us hope without fear and trembling, though I suppose it's heretical to say so. Mr. Clyde says he does not propose to make known to-day whom his party has slated for the collective Moses of twelve who is (or are) to succeed the equal number of present members in the directorate.

Western Union is still something of a puzzling feature of the market. It was sold because the directors were going to do some new thing—rumored to be distinctly adverse to higher prices. It was rallied because—well because there was a reaction to the scare. Now it comes out that the stock is to be increased to \$100,000,000. So the stock goes up. Then it goes down a little apparently, because of fear that this stock will be dumped on the market. I think myself, from what I have heard from persons near to those who direct the Western Union Telegraph Co.'s finances, that the stockholders' interests are being looked out for admirably, and that one need not be unduly alarmed at such an evidence of this great corporation's advancement as an increase of 18 per cent. in its capital stock.

Norfolk, Wilmington & Charleston Railroad.

In these days when railroad companies expend vast sums and engineers overcome many natural obstacles in order to shorten the route by rail between important points, an enterprise which proclaims its purpose to shorten by over 100 miles the distance between the great commercial metropolis of the United States and a leading and commanding city of the South Atlantic coast, besides opening up a country several hundred miles in length and from 25 to 100 miles in breadth, with sufficient traffic already in sight to insure the commercial success of the undertaking, is well worthy of attention. The company which intends carrying out this project is the Norfolk, Wilmington & Charleston Railroad Co., and the road is to extend from Norfolk, Va., via Wilmington, N. C., to Charleston, S. C., a distance of 355 miles, which, with connections, will make the distance from New York city to Charleston 700 4 miles, or 103 miles less than by the Atlantic Coast Line between the two cities. An exhaustive examination of the country and surveys have been made, the company having three engineering corps in the field nearly nine months in charge of Major John Runk, who was especially qualified

for the work by an experience of two years in studying the territory.

The report of Major Runk is a comprehensive and convincing document, and his conclusions that the railroad is needed, can be built and operated at a reasonable cost and will be remunerative to the investors are supported by a strong array of facts and figures. The region to be traversed by the road is the best trucking country in the United States, and already sends many million dollars' worth of fruit and vegetables to the North. Cotton, rice, corn, potatoes, peanuts and other staple products are raised in large quantities and shipped away largely by boat. The streams abound in fish, which form an important article of trade. Millions of acres of fine forests of all kinds of timber are tributary to the road, and capable of supplying immediate and continuous traffic. The 7,000 square miles of country between Charleston harbor and Norfolk that this road would draw from is, as Major Runk puts it, a region with which no other similar area of territory of the United States is fairly comparable for variety and extent of resources, for fertility and productive capacity as regards both quality and quantity, for its cotton, varieties of fruit and vegetables, and for its healthful and agreeable climatic conditions. It is a fairly populous section, with many important cities and towns. Among those that are either on the line of the new road or easily reached from it may be mentioned Norfolk and Wallacetown, Va.; Yardley, Gateville, Coleraine, Windsor, Williamston, Factolus, Greenville, Washington, New Berne, Johnson's Mills, Dover, Pink Hill, South Washington, Burgaw, Wilmington, Point Caswell and Ermenie, N. C., and Conway, Fraser, Georgetown, Santee, McClellandsville and Charleston, S. C.

It almost goes without saying that there are no grades of importance in the entire stretch of country from Norfolk to Charleston, and that the character of the land greatly favors easy and economical railroad construction. For long distances almost no grading will be required, and the track can be laid with scarcely any cost beyond that of the rails, ties and ballast. The abundance of timber insures a supply of the best ties at the least possible cost, and the freight charges upon rails, delivered at numerous points by water, will be low. The right of way has been given free, and township and borough subscriptions already made, and many subscriptions have been promised by communities and individuals anxious to secure the benefits which railroad facilities give.

The remarkably level character of the country between the termini makes it practicable to build a road at a cost much below the average. The material to be moved from the road-bed is a sandy loam, no rock or hardpan being on the entire route. The controlling grades will not exceed thirty-five feet to the mile and curvature not over four degrees, and the material to be moved is about 8,000 cubic yards per mile. The bridging and trestling will be less than 40,000 feet. It is contemplated for the present to have a terminal on the Cooper river opposite Charleston, and an alliance may be made with the Norfolk & Western for terminals at Norfolk. The estimated total cost, completed and equipped, is \$4,767,709, or \$13,430 per mile. It is calculated that the probable traffic for one year would make gross receipts of \$2,900,856.50, less 65 per cent. for operating expenses, leaving net earnings of \$1,015,299.78.

Railroad Notes.

The board of directors of the Atlantic & North Carolina Railroad at a recent special meeting declared a dividend of 2 per cent. on the capital stock. The State of North Carolina owns \$1,266,500 of the capital stock of \$1,792,200. The road is

ninety-five miles long, and has a funded debt of \$325,000, according to the last financial statement.

THE Baltimore & Ohio is having built 400 standard double-hopper gondolas of 60,000 pounds capacity each, of which 300 are for the Monongahela River Railroad, a connection of the Baltimore & Ohio. This company will soon receive 500 wooden hopper gondolas built by the South Baltimore Car Works.

THE following figures relative to the Texas & Pacific, Chesapeake & Ohio and Louisville & Nashville are of interest. Texas & Pacific mileage 1,497; gross earnings first week of September \$126,871—decrease \$1,032; gross earnings from January 1 to September 7 \$4,039,626—decrease \$235,995. Chesapeake & Ohio mileage 1,269; first week of September \$201,797—decrease \$5,919; from January 1 to September 7 \$6,283,415—increase \$270,425. Louisville & Nashville mileage 2,933; first week of September \$418,540; from January 1 to September 7 \$14,308,159—increase of \$1,034,001.

THE Empire & Dublin Railroad, running from Hawkinsville, Ga., to Dublin, Ga., a distance of forty miles, which has been in the hands of a receiver for some time, has been purchased at public auction by Claude Estes, of Macon, representing New York parties.

PRESIDENT W. A. LASH, of the Cape Fear & Yadkin Valley Railroad Co., in contradicting an adverse story, states that the equipment and physical condition of the Cape Fear & Yadkin Valley road will compare favorably with any road in North Carolina, and was never better than at present. It has not a dollar of floating debt, and can always meet the interest on its bonds.

At the annual meeting of the stockholders of San Antonio & Aransas Pass Railway, in San Antonio, these directors were elected: D. B. Robinson, H. D. Kampmann, A. C. Shriver, A. Elmendorf, J. Kennedy, Ulrich Lott, William Huernen, Sr., E. P. Swenson and Reagan Houston. The directors elected officers as follows: D. B. Robinson, president; E. P. Swenson, vice-president; W. H. Fields, treasurer, and Reagan Houston, secretary. A rumor is current that the Southern Pacific has bought the San Antonio & Aransas Pass.

THE Western Maryland Railroad has opened its new Potomac Valley branch, extending from Williamsport, Md., to Cherry Run. This branch furnishes a middle link between the Baltimore & Ohio and the Reading systems which will use the line under a traffic contract, and by its use the route for the interchange of freight between the Baltimore & Ohio and the Reading is greatly shortened. The branch will have a heavy volume of business at the start, and will exercise a beneficial influence upon the future operations of the Western Maryland.

THE reports that the Texas Central was surveying for the extension of its road between Ross and Waco, Texas, and for an extension towards Red river, is denied by that company.

THE Gainesville, Jefferson & Southern Railroad, which is operated by the Central Railroad of Georgia, shows gross earnings for the past fiscal year of \$36,367.49, and expenses of \$36,283.94.

THE annual meeting of stockholders of the Louisville & Nashville will be held on October 5, Alabama Great Southern the same date, and the Illinois Central October 12.

A COURT order has been issued requiring the sale of the Knoxville Southern Railroad, now part of the Marietta & North Georgia, unless the amounts due to leinors, together with interest, be paid within thirty days.

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BALTIMORE, SEPTEMBER 16, 1892.

Notice to Advertisers.

The last forms containing advertisements are closed on Tuesday afternoon. New advertisements or changes should be received not later than Tuesday noon to ensure attention in the issue bearing date of the following Friday. Reading matter should be in our office on Wednesday, although late news can be received early Thursday morning.

WHILE the past season has not been altogether favorable for the farmers and canners in Botetourt county, Va., the latter have found a stronger demand and readier sale for their output than was expected. Altogether over 50,000 cases of canned corn, tomatoes and okra will be made in the county by some fourteen canners. This industry seems to have taken a good hold wherever tried and should become more general. It is a benefit to the farmer and to the town in which it is located.

MR. C. J. HADEN, president of the Hosch Lumber Co., of Atlanta, Ga., and well known to the Southern lumber trade as secretary of the Georgia Saw Mill Association, went abroad a few weeks ago to look up the British market for Southern timber. He is now in England making a very thorough inquiry into the conditions and requirements of the timber trade and methods of doing business, and the results of his investigations will be embodied in a series of letters to the MANUFACTURERS' RECORD, the first of which we publish this week. What Mr. Haden writes is worthy of the careful consideration of every lumberman in the South.

IF the production of sugar beets is as profitable to California growers as reports would indicate, why is it that Southern farmers are afraid to undertake raising them? That it can be done there is no doubt, but for some reason, even though propositions have been made to establish works in a district where a certain weight of beets would be guaranteed by the farmers, the plan has fallen flat. Is it that the farmer doesn't feel interested that he don't need a paying crop, or

what? Apparently there is some shadow hanging over the sugar beet, and it is to be hoped that the farmers may brush either it or the cobwebs from their eyes and see the opportunity offered for a crop which is easily grown and sells on a cash basis.

ADVICES from England state that owing to the great depression in trade, the Master Cotton Spinners' Federation of Great Britain has decided to make a 5 per cent. reduction in the wages of employees. Eighty per cent. of the firms in the trade are in favor of this course, and the remainder will probably agree to it. The workmen have decided on a general strike when this takes place, as they think that restricting the output will answer the same purpose as a reduction in wages. The contrast between this condition of affairs and the prosperity of our Southern mills is so marked that our English cousins should be able to see that in this, as in all other branches of business, the location of a mill near the source of raw material is essential to success in both prosperous and dull times.

IN South Carolina there is a law which provides a fine of \$1,000 or imprisonment for a term not exceeding one year, or both, as a penalty for the manufacture or sale of impure fertilizers. This law is now being enforced, and the Sumter Fertilizing Co., charged with furnishing fertilizers containing 60 per cent. sand, has been proceeded against. The outcome of this matter will be watched with interest by farmers and the fertilizer trade. Severe competition has induced a lowering of the standard of certain classes of fertilizers, and if all companies shall be compelled by law to maintain a standard grade of excellence, there will probably be an effort made to unite many of the interests and thus avoid price cutting, which would be disastrous to the weaker concerns. The law is a good one, and the principle involved might be advantageously applied in other directions.

Cotton Growing in Africa.

A recent consular report in England describes the cultivation of cotton which has been undertaken in the British protectorate of Vitu, on the coast of Zanzibar, in East Africa. The earliest attempts made were by the Germans, but, owing to poor labor, they failed. Recently, however, systematic work has been done, and the result appears to have been successful. Samples of the cotton have been shipped to Europe and pronounced of excellent quality. The soil is adapted to the growth of Sea Island cotton, and a large area will be put under cultivation.

There is little reason to fear that this new cotton territory will interfere with the American staple. It was supposed at one time that both India and Egypt would be strong competitors with the United States, but Indian exports to England have rapidly decreased since 1868, and Egyptian cotton, while increasing in the quantity exported each year, is used for a class of goods for which American cotton is not deemed suitable, or as a mixture with it for special kinds of material. Peruvian cotton, or as it is sometimes called "vegetable wool," it was thought would compete with Sea Island cotton, but the two are used now for entirely different purposes. Should the Sea Island variety be successfully grown on the African coast there might be a chance of its affecting the market for this staple, but the greater expense of growing and preparing that class of cotton

for market will effectually bar any material lowering in price.

A New Market for Southern Pig Iron.

The possibility of finding a market for Southern pig iron in Great Britain seems to be attracting considerable attention at the present time on the other side of the Atlantic. The low prices at which pig iron has been sold lately at furnaces in several of the Southern States has been commented upon frequently by a number of leading English trade papers, one of which has accounted for these low prices by stating that—

in the Southern States the rate of wages is in some cases not more than one-half of the rate paid in the Northern and Middle States. The competition of the Southern States is likely in the future to be one of the controlling elements in the industrial situation. It is claimed that the South has superior natural advantages not only for the production of iron and steel, but for other industries as well, and the competition founded on this superiority, although still in its infancy, is likely by and by to lead to one of two results—either the wages of the South must be leveled up to the wages paid in the North, or the wages paid in the North must be leveled down to the Southern standard.

So far as the labor cost in pig iron is concerned, our English contemporary has fallen into an error which many well-informed papers in this country have not escaped. Furnace labor in the South is little, if any, cheaper than in the North, and the larger amount of labor required by Southern furnaces brings the labor cost of a ton of Southern pig usually above the same item in other sections. The very exhaustive statistics of cost of production which were published two years ago by Carroll D. Wright, commissioner of labor, demonstrated this fact pretty plainly, and showed as well that the cost of coke is higher South than North. More recently President John Birkinbine, of the American Institute of Mining Engineers, has emphasized these same two points in a paper read at the Plattsburgh meeting of the institute. In referring to the advantages possessed by Pittsburgh, Chicago and Birmingham as pig iron producers, Mr. Birkinbine said:

The expense for fuel per ton of pig iron made was lowest in Pittsburgh and highest in Chicago, whereas the cost of iron ore per ton of pig iron made was lowest in Alabama and highest in Pittsburgh. Labor per ton of product, however, is reported highest in the Birmingham district and lowest in the Pittsburgh and Chicago districts. The labor cost difference is because of the superiority of Northern furnaces, the daily production of a Pittsburgh furnace being much larger than that of a Southern furnace, while the labor is not proportionately greater.

Well as these facts are known in the iron trade in this country, the nature of the advantages which the South enjoys in the manufacture of pig iron are not fully appreciated in England. It is chiefly to the ease of mining and consequent cheapness of Southern ores, and to the minimum cost of assembling the raw materials, that the low cost of iron manufacture in the South is due. The saving in these items is sufficient to pay the freight on pig iron to distant markets and leave something for profit beside.

But going back to the possibility of finding a market abroad for Southern pig iron. It seems that during the strike of the Durham coal miners in England, pig iron was imported from Spain by a number of English iron and steel manufacturers. As pig iron was then being sold in this country at extremely low prices at several of our Southern furnaces, the advisability of importing iron from the South began to be seriously considered by proprietors of

English foundries and rolling mills. The termination of the strike in the Durham district, however, caused the matter to be dropped for the time being, but, judging from the extract printed below, which appeared in the weekly market report of the London Iron and Steel Trades Journal for August 27, the question of calling upon some of our Southern furnaces for future supplies of pig iron is likely to be again agitated in England. The extract from the Journal is as follows:

American advises report a sale of common forge pig iron, made in the Southern States, at five cents, under \$8 per ton, equal to about 33s. per ton. The lowest quotation given by English makers of common forge iron is 38s. In the magnitude of their output of pig iron the United States has left us far behind, and if business at \$8 per ton represents a *bona fide* sale with profit to the producer, evidently costs are lower in the Southern States than in this country. Many years ago some of the Durham ironmasters discovered that the Southern States of America would become the great centre of iron smelting, and they acquired large tracts of mineral property in Tennessee. More recently Alabama has been invaded by capital from our Midland iron centre, though the primary results in some instances have been disappointing. The members of the Iron and Steel Institute who in the autumn of 1890, visiting the iron and coal regions of the South, saw a region where coal was almost given away, and where ironstone and limestone were to be had for asking, and they wondered what their costs on a ton of pig iron would be in their works if they could get fuel and materials at Alabama prices. Some of our iron founders occasionally import small lots of Lake Superior charcoal pig iron. Swedish iron has entirely superseded English charcoal pig iron, with the one exception of "Lorn iron," and it is possible that the American iron smelters may shortly find a new outlet for some of their surplus make in this country. Our steel works, dependent on imported ore, are gravitating to the coast to avoid railway rates, and if pig iron is to be included among our imports, mills and forges working for export will have to be located on the seaboard.

The fact that mill pig iron has been sold lately in this country for \$1.25 per ton less than it can be bought for in Great Britain may surprise many pig iron manufacturers on both sides of the Atlantic, and yet the statement could be made somewhat stronger, for in July last a sale of 1,000 tons of mottled iron was made at Birmingham on a basis of \$7.75 free on board cars at that place. To be sure, this was an exceptional price, but it is not improbable that it could be duplicated under similar conditions.

Southern manufacturers of pig iron should look into this matter of exporting forge and foundry iron to Great Britain. With low cost of water transportation, it is quite possible that in the near future the furnaces of the South may be engaged in shipping pig iron across the Atlantic, a business which more than a century ago gave profitable employment to a number of furnaces along the Atlantic coast in Massachusetts and Pennsylvania. At any rate, the suggestion of our English contemporary will bear investigation, and it is well worthy attention from some of the progressive iron manufacturers of the Southern States.

An Opportunity for Florida Fruit.

The White Star steamer Majestic, from New York, recently discharged a large cargo of California fruits in Liverpool. Advices in regard to it state that, owing to the special refrigerative arrangements provided on the steamer for the purpose, the fruit was in first-class condition and found a ready market at good prices.

We have several times called the attention of Southern fruit growers to the opportunities presented by this trade, and while all appear to be greatly interested in the subject and anxious to see it accomplished,

no one there has the courage to start the movement toward accomplishing it. Indeed, there is for some reason very little feeling of unity of interest among Southern fruit growers, and particularly those in Florida. The efforts of the Fruit Exchange there to help growers in marketing their crop and the advice of the exchange in regard to prices, which it is desired to secure for oranges during the coming season, have met with unnecessarily severe criticism instead of co-operation. Even an offer on the part of a New York gentleman to charter a steamer at a heavy expense, advance seventy-five cents a box to growers and carry a cargo of oranges to England for sale has been disparaged by some, and yet it is a straightforward business proposition, and one which, if viewed even intelligently, means a great deal for the Florida fruit producers.

There is one means by which the fruit growers of Florida can feel assured of receiving low prices for their crop, and that is the one they appear to be following. Unless they will combine and act in unison to hold up the price of their fruit, one after another will cut prices and values will tumble below what they were last year. By sending fruit to England and opening that market there will always be less danger of overstocking the market here, and consequently prices will be better maintained. Fruit growing in the South has already attained considerable proportions, and the prospects are that within a few years it will be greatly increased, and unless a market other than that afforded by Northern cities is opened there will be a certainty of seasons when the crop is so in excess of the demand that either the fruit will be allowed to rot on the trees or will be sold at figures which will not repay the cost of picking. There is always danger in extremes, and this is one which should be guarded against before it causes loss.

The English market is one which, if properly attended to, should grow to be a very large one for not only the fruits, but also many of the early vegetables and possibly the finer flowers of the South, and it is a poor illustration of Southern energy to think that California can ship by cars over 2,500 miles, then transfer to a steamer and send across the ocean, while our Southern fruit growers, almost within sight of the coast, quarrel among themselves and with anyone who tries to help them.

Atlanta Has the Cheapest Water Rates South.

By Col. J. W. Avery.

Mr. W. G. Richards, the capable and efficient superintendent of Atlanta's fine water system, has prepared a statement that shows Atlanta to have the lowest rates of any cities of 20,000 people and over in the United States, with the single exception of Rochester, N. Y., and Salem, Mass., which are but a small per cent. under Atlanta.

Taking the yearly water rates for families of seven persons, we find the following interesting figures of comparison:

Atlanta, Ga., \$10.	New York, N. Y., \$14.
Richmond, Va., \$14.	Philadelphia, Pa., \$16.
Louisville, Ky., \$20.	Memphis, Tenn., \$24.
Kansas City, Kan., \$30.	Charleston, S. C., \$32.
Nashville, Tenn., \$36.	Oakland, Cal., \$42.
Average, \$25.	

Good, cheap and abundant water for houses, yards, streets, fires and factories is the need and means of growth of progressive cities, and Atlanta not only has it now, but with characteristic enterprise and wise liberality is enlarging her water supply to meet any demand by the building

of a new and magnificent scheme of water works that are being rapidly constructed, and will be completed early next year.

The location of the new works is a point on the Chattahoochee river above the mouth of Peachtree creek, where the water can never be contaminated by drainage from the city, as the valleys of two large creeks intervene between the city and the river. This point was picked by Mr. Richards ten years ago, and finally selected by City Engineer Clayton, with the approval of Mr. Rudolph Herring.

The city is 1,050 feet above the sea and the river point 760 feet. The plant consists of two Gaskill pumping engines of 10,000,000 gallons capacity each, at the river, which will pump into a storage reservoir 225 feet above the river and 17,000 feet to the city, and at the bottom of the reservoir, forty feet below the surface, will be a filter plant with a capacity of 8,000,000 gallons a day, which discharges into a 1,000,000-gallon clear water basin, from which a second set of pumping engines discharges through 30-inch water pipes into the city. The "domestic pressure" will be forty to sixty pounds, and "fire pressure" 80 to 100 pounds. The Holly system is used with its direct pressure.

At the river, station No. 1, the water rises twenty-six feet from the low mark. A dyke encloses two acres in which is the engine-house. The intake is a 48 inch pipe 600 feet long, whose end is one foot below low-water mark, and has one foot fall its whole length, and ends in an elliptical-shaped suction well whose diameters are thirty and sixty feet. The suction pipes from the well to the pumps are 30-inch, and have a maximum suction lift of sixteen feet, with valve on intake pipe to control water and a by-pass connection to flush the intake, and a drainage well in the dyke to pump out in continuous high water.

At station No. 2 the reservoir holds 180,000,000 gallons, enough to tide over any trouble. A second main is to run between the two stations. The reservoir embraces twenty acres, and is a deep ravine hedged in by two dams. The filters will have a gravity head of forty feet, and are connected by 36 inch pipe with reservoir and clear water basin, which latter is circular, 100 feet diameter and twenty feet deep, holding 1,000,000 gallons, and has one high duty 10,000,000-gallon Gaskill engine and one Holly quadruplex of 4,000,000 gallons.

From station No. 2 a 30-inch pipe carries the water a mile and a half, distributing into one 20 inch pipe going south into the centre of the city and two 16 inch pipes going east and west.

The river station No. 1 is a mile and a-half from the Western & Atlantic Railroad, and the reservoir station No. 2 is on a side line of the Richmond & Danville Railroad. The new water works cost \$750,000 and give Atlanta perfect water supply.

Mississippi's Railroad Assessment

The objections presented by the railroad companies of Mississippi to the excessive assessment of their property by the railroad commissioners of that State were considered by the commission at the September meeting and action postponed until the 19th of October in order to allow the board to deliberate on their decision and for the purpose, it is stated, of obtaining the advice of the attorney-general. The assessments made by the board raised the valuations from 200 to 300 per cent., and the result of the increase is that the railroad and telegraph property in the State was assessed at a total valuation of about \$47,000,000, as against the returns made by the various companies of \$10,000,000. The railroads give a valuation of about \$6,500 per mile and the commission as-

sesses at an average of about \$18,500. The total railroad mileage is reported at 2,459 miles.

Southern Lumber Notes.

THE Blackshear-Miller Lumber Co.'s mills at Brewton, Ala., have resumed operations after extensive repairs.

THE Deis Manufacturing Co.'s new woodenware factory at New Alexandria, Va., is now about ready to commence operations.

MR. C. L. BUCKI, of Ellaville, Fla., has decided to erect an extensive saw mill plant at Jacksonville to have an average daily output of 100,000 feet of lumber (annual output exceeding 30,000,000 feet) and giving employment to about 150 men. Site has been secured, and the new mill will be put up at once, contract for the buildings having already been let to Messrs. Mairs & Lewis, of New York. The plant will be operated under the title of the L. Bucki Lumber Co.

THE Hoo Hoo Lumber Co., to which a charter was granted several weeks ago, will operate the Carroll mill, near Woodville, Texas. The company has elected Joe E. Carroll as president, and C. T. Heisig as secretary and treasurer. The plant has been thoroughly overhauled and is now in operation.

MR. W. Z. OVERBAY, of Bowling Green, Fla., has completed a new saw and planing mill, built to replace his plant which was burned last spring. He has also put in a special outfit for the manufacture of box heads.

MR. F. H. COFFEY, of Lenoir, N. C., has received an order for \$20,000 worth of poplar lumber from a New York firm.

DURING last week the shipments of timber and lumber to foreign ports from Pensacola, Fla., amounted to 10,928,000 superficial feet, valued at \$117,937.

THE Consolidated Manufacturing Co., of Bessemer City, N. C., has its new plant in successful operation turning out general building material. Within sixty days the concern will commence the manufacture of furniture.

A TWO STORY addition, to be used as a finishing department, is being erected to the Tompkins woodworking factory at Lake Charles, La.

THE British steamship Skuld from London, England, arrived at Velasco, Texas, on Monday last, and will load at once with lumber and timber for a Mediterranean port. Part of her cargo will consist of 1,500 cedar logs, each from two and a half to three feet in diameter at the butt and from seventy to eighty-five feet long. They were cut in the San Bernard cedar brakes, above Velasco, and are intended for a pencil factory in France, whose agent was here several months ago.

MR. S. R. CONGER has commenced the erection of a woodworking factory at Jackson, Tenn., and has purchased all necessary machinery.

J. W. NORCROSS has completed his new circular saw mill at Clinton, Tenn., and is ready to commence operations. It will cut 40,000 feet of poplar and oak per day.

S. A. SIMMONDS's mill at Clinton, Tenn., is running steadily and turning out a fine lot of pine and hardwood every day.

MESSRS. GILLES BROS.' mill at Clinton, Tenn., has been shut down to wait for timber, which comes down the Clinch river.

ARRANGEMENTS are said to be in progress for the erection of another handle, spoke and felloe factory at Stephens, Ark.

THE Ketcham Lumber Co. has definitely decided upon Loudon, Tenn., as the point of location for its woodworking plant, and will at once make preparations for its erection. It is proposed to establish a plant that will employ over 100 men, and

they hope to be ready for operations within ninety days.

THE Creosote Lumber & Construction Co., of Fernandina, Fla., is engaged on an order for creosoting 600,000 feet of yellow pine and 60,000 feet of oak, to be used in the construction of the government dry-dock at Port Royal, S. C.

THE Condon Lane Boom & Lumber Co., of Bretz, W. Va., one of the largest concerns on the West Virginia Central, has put its mill in operation.

THE Soule Steam Feed Works, of Meridian, Miss., has recently placed its feed in the mills of the Lar Nana (Texas) Lumber Co., Fairhead, Strawn & Co., at Jacksonville, Fla.; P. E. Black, at Newton, Miss., and Bristow Bros. and Holloman & Son, at Purvis, Miss.

A NEW Women's Christian Association building to be erected at Buffalo, N. Y., next spring, will have its principal rooms finished with Louisiana red cypress, which has been donated by one of Louisiana's largest cypress companies.

THE Deis Manufacturing Co.'s woodworking plant at New Alexandria, Va., is rapidly nearing completion. The machinery will be shipped from Canal Dover, Ohio, this week and placed in position as soon as it arrives.

MESSRS. R. D. GRIEBEL & Co., of Houston, Texas, intend to add a sash, door and blind factory to their present plant. Full outfit of machinery has been purchased and is now being installed. They will operate chiefly on odd sizes and special house finishings.

THE Keystone Boom & Lumber Co., which was chartered at Charleston, W. Va., several weeks ago, will begin operations at the earliest possible day. A meeting of the incorporators of the company was held at Philadelphia last week, and W. C. Russell, of Elkins, W. Va., one of the directors, was instructed to examine into the availability of Belington, Elkins, Beverly, Huttonsville and other points along the West Virginia Central Railroad, that it may be decided at once at what point the plant will be located. The town of Belington is putting forth great efforts to secure the plant, and will offer a free site and other concessions. Those interested in securing the plant for Belington hold, among its numerous advantages, the fact that it is the junction of the Baltimore & Ohio and the West Virginia Central, and that from that point there is more timber now accessible than anywhere else in Randolph county. The mill which the Keystone Co. proposes to build is to be quite a large one, and, with the lumber camps in connection with it, will employ a large number of men. The concern's capital stock is placed at \$100,000.

AT the recent meeting of the Farmers' Institute in Lynchburg, Va., Mr. Henry L. Lyman, of Albemarle, read an interesting and instructive address on grape culture, bearing especially upon the opportunities presented in Virginia for such purpose. Throughout the State there are slopes eminently suited in climate, soil and other conditions for the cultivation of both the table and wine grape, and wherever it has been tried intelligently success has followed.

THE Morgan Line of steamships have resumed their direct line between Galveston, Texas, and New York. During the past year this line has been discontinued, but in future one steamer a week will sail between the ports named.

THE steamer El Norte, launched at the yard of the Newport News Shipbuilding & Dry Dock Co. on May 14, made her trial trip during the past week. Everything worked satisfactorily, and the ship is now having the finishing touches put on.

Fort Valley: A Thriving Georgia Town.

FORT VALLEY, GA., September 9.
Editor Manufacturers' Record:

The impression has gone abroad that there is nothing in or near to prosperous Fort Valley except peaches and peach orchards. This is entirely an erroneous impression. I admit the peach industry around here is the largest and widest known in America, and no person has worked harder than myself in making it of such importance. But there are other things here that gave Fort Valley an enviable reputation abroad before the peach industry was ever conceived, and it is of these substantial and lasting industries belonging to this place that I wish to make a note for the readers of the MANUFACTURERS' RECORD.

The oldest manufacturing institution and the first of importance is the Georgia Agricultural Works, owned by O. H. Miller. This enterprise was founded before the late civil war, during which period it was conscripted to manufacture wagons and tents for the Confederate army. After the war Mr. Miller manufactured wagons, buggies and the Dan Law cotton planters on a large scale. In 1876, Centennial year, he went to manufacturing the now famous "Centennial" cotton gins, feeders and condensers, at which he has succeeded beyond his expectations, together with the "Georgia" wagon, from one to four-horse. This institution enjoys orders sufficient to its capacity, and often has to work overtime to keep up with the increasing business. The territory in which these goods are sold is the entire cotton-producing States, or from Virginia to Texas, including Indian Territory. About twenty-five expert mechanics are employed, besides a large number of common laborers and clerks, to say nothing of the numerous agents throughout the territory he covers, who draw many dollars from this institution which has brought so many thousands of dollars to Fort Valley.

Martin's Foundry, owned by A. S. Martin, formerly of Vermont, was established here some eight years ago, and is an enterprise of which every citizen of the town and surrounding country is proud. Mr. Martin is certainly a master of every detail of the business. As an evidence of it and the superior grade of casting he makes, he has had contracts by the year for several years from manufacturers in Macon, Atlanta and Columbus, which cities all have several large foundries. He furnishes all the castings for the Georgia Agricultural Works, F. H. Lummus, Sons & Co., Juniper, Ga., and James T. Gault, Macon, Ga., who, until this foundry was established, had to buy all the castings they used in the North and East, there not being a foundry anywhere in the South that could make the grade of castings required. Mr. Martin works from ten to thirty moulders, often taking a "bench and floor" himself when he is pushed. His business has grown wonderfully, and is certain to continue to increase. He has contracts for five years ahead, sufficient to keep fifteen moulders at work all the time, but it is a common occurrence for him to have double his force for several months in the year. He sends out certain kinds of casting regularly to half dozen Southern States. This institution has been an important financial feeder to Fort Valley, and it has brought numbers of good Northern citizens here to dwell permanently.

Adjoining this is Anthoine's machine works, owned by J. W. Anthoine, who came here some fourteen years ago from Massachusetts to accept a position as foreman in the machinery department of the Georgia Agricultural Works. Mr. Anthoine is a fine draughtsman, pattern-maker and master machinist. He manufactures An-

thoine's anti-friction cotton press, the dollar force and lift pump, shafting, hangars, pulleys, and does a general machinery repairing business, bringing in many thousands of dollars to Fort Valley annually. He has just about completed a well-arranged two-story shop 60x100 feet, with a shed 30x100 feet, and will increase his output this fall and next spring.

The Fort Valley Variety Works, owned by Mr. S. F. Dasher, is one of Fort Valley's leading and most prominent institutions. It turns out moulding, brackets, banisters, stair rails, and builds all kinds and styles of houses on contract. They also get out building material for other contractors. Mr. Dasher owns a large mill in the pine belt that supplies his works. This fall he will add full outfit of door, sash and blind machinery, and will otherwise extend and improve his already well-equipped plant. He employs at these works anywhere from twelve to forty hands.

The largest industry here is the Fort Valley Crate & Lumber Co. W. S. Tatman is president; F. W. Gano, vice-president; J. P. Horton, secretary and treasurer; P. L. Richards, manager; Geo. E. Lake, superintendent. They manufacture every size and style of fruit and vegetable crates and baskets known to shippers of this class of products, and enjoy a good patronage from all Georgia and Florida fruit and truck-growing sections. Their Mr. Lake is a basket and crate maker of fifteen years' experience, and is one of the best experts in this line Michigan ever turned out. They own a fine saw mill and get out their own boards, besides doing a general lumber business. Their main building is L-shaped, two stories, 60x160 feet; store-room, 40x150 feet, two stories; dry shed, 40x600 feet; an automatic dry-kiln, 60x200 feet, with ten fans; engine and boiler-house, 25x30 feet; blacksmith shop, 30x40; two steam boxes, 4,000 feet each board measure capacity. These all occupy six acres on the railroad with ample private trackage. They are now preparing to build a tram road into Flint river swamp to draw their timber, and will want rails and engine, standard gauge. They employ from 100 to 150 hands, and will increase this number another year. Their annual output now is something near \$100,000, and they look for this to double within a year. Nearly all their work is done by the piece, and their hands are paid many hundred dollars weekly which goes to swell the trade of the town. They are now manufacturing crates and packages for the Florida trade and report orders very fair for a new industry.

The Fort Valley Bottling Works is another one of Fort Valley's industries. Col. Samuel T. Neil is proprietor. He keeps 1,500 to 2,000 two-dozen cases of soda water moving all the time, besides shipping large quantities of ginger ale, cider and mineral waters by the keg and barrel. The success of this concern has been phenomenal since its first day of business, and its products are known for 100 miles on the five railroads diverging from Fort Valley. Colonel Neil says his orders are always on the increase, and thinks of increasing his capacity at an early day.

This is the list of established and flourishing manufactorys here, which are as much or more benefit to the town than all the peach industry.

There is room for many more factories. We will soon have two canning factories, the Fort Valley Canning Co. and B. W. Sperry's cannery. Mr. Sperry's address is care Brown House, Macon, Ga. There is also a movement on foot to build a large ice plant, and if this should not materialize there is not a better opening on the globe for an ice factory. The fruit shippers alone used from fifty to 100 tons of ice last season per day, and in two years' time the fruit shippers alone will use 300 tons per

day, and fully fifty tons can be sold to consumers. Water directly on the railway can be secured in a sufficient quantity to manufacture 1,000 tons per day. I do not know any place an investment would pay as well as Fort Valley, the centre of the largest peach acreage in the whole world.

WILL F. WINNE.

Open Workings in England.

Close to the James Bridge Brick Works, Walsall, may be seen in full swing the operation of coal getting within ten feet of the surface over an area of from eight to ten acres. The whole of the estate covers about 129 acres, and at ten feet from the surface it was discovered that a rich seam of thick coal extended over the distance named. In addition a 5-yard seam of fire-clay and ironstone, in lumps of from one to two tons in weight, was found. The coal is now being worked, being taken in its natural state from the open mine and fed into the engine fire, all within a distance of about ten yards. The seam of coal is about ten feet thick, and is computed to last from ten to fifteen years. It is said that this is the only open works in the Midland district, with the exception of the Wren's Nest, Dudley.

Coal and Coke Notes.

THE old Dora coal mines, situated twenty miles from Staunton, Va., which were opened several years but not worked on account of legal complications, are now being prepared for active mining. The deposits are an excellent quality of anthracite. Messrs. W. G. Kinney and Harry Wegner, of Staunton, will conduct the operations.

MESSRS. WM. BEURY, COOPER & CO. will open a new coal mine on New river opposite their present mine at Caperton, to be in operation by April 1 next.

THE Ford Run Coal Co., to which a charter was recently granted, intends to develop a large vein of coal near Philippi, W. Va. The concern's capital stock is placed at \$500,000. Samuel N. Woods and D. Kelly, of Philippi, and Frank R. Biedler, of Baltimore, Md., are the incorporators.

A REPORT is being circulated through the papers to the effect that the Bertha Zinc & Mineral Co. has found a vein of semi-anthracite coal 100 feet thick at the Altoona mines, near Pulaski, Va.

A GREAT increase in production is noticeable in the Pocahontas coal region, and all indications point to further material development in the near future. The coal shipments of the Norfolk & Western Co. last week aggregated 57,546 tons, against 44,614 tons for the corresponding week last year, being an increase of 12,932 tons. Since January 1 the shipments have been 1,888,482 tons, against 1,722,742 tons in the same period of 1891, an increase of 165,740 tons.

THE Gilliam Coal & Coke Co.'s fifty new ovens on the Elkhorn (W. Va.) are progressing rapidly, twenty of them being already completed.

AN 8 foot seam of coal is being tested and an entry driven by the Pioneer Coal Co. on Thirteen Mile fork of Campbell's creek, W. Va.

THE proposition of the Tennessee Coal & Iron Co. to the Aldrich Coal Co., viz., \$3,000,000 common stock of the Tennessee Coal & Iron Co., and the guarantee of \$1,000,000 of the outstanding Aldrich bonds for its properties and \$100,000 bonds in the treasury, received a final consultation by the different committees on the first instant, and was before the Tennessee coal and iron stockholders on the 12th for approval.

IT is understood that the affairs of the Pine Mountain Iron & Coal Co. have been put in shape after a difficulty which has

lasted for several months. \$15,000 interest on the bonds has been paid by the Southern Land & Improvement Co., and also \$2,000 balance due on a payment of the same amount made some time ago. The contract assuring the payment of \$500,000 bonds was signed some time ago, but is yet to be ratified by the company.

THE construction of extensive coal wharves at Bay Ridge, Md., on the Chesapeake bay, is now under contemplation by the Baltimore & Ohio Railroad Co.

Southern Textile Notes.

THE machinery has arrived for the new cotton goods factory to be established at Memphis, Tenn., by D. J. Griffin & Co., of Boston, and will be placed in position as soon as the building is completed. The plant is to be ready within sixty days, and it is said will employ over 100 persons.

THE Charlottesville (Va.) Woolen Mills have had to cease operations on account of the low water in the Rivanna river, as their plant is operated by water-power.

C. D. BEEBE, of Chattanooga, Tenn., is endeavoring to have a \$500,000 stock company organized for the purpose of erecting a cotton mill. It is proposed to build a 30,000 or 40,000-spindle plant.

THE Huntsville (Ala.) Cotton Mill Co., manufacturers of yarns, warps, etc., has declared an annual dividend of 10 per cent., besides having paid off during the year a bonded debt of \$16,000, and with money in the treasury. This mill operates over 10,000 spindles and is officered by A. S. Fletcher as president, and R. L. Pulley as treasurer and agent.

MR. J. A. HUGHES will start a one-set woolen mill at Centre Point, Ark., this winter. Operations will be conducted as the Centre Point Woolen Mills.

MR. LAFAYETTE HOLT, M. E., of Burlington, N. C., informs us that he is figuring for a company to build a new cotton mill in Burlington.

THE Fort Mill (S. C.) Manufacturing Co. informs us that it may put in 200 more looms in the spring of 1893, and not 400 as was stated last week.

A NEW two-story building 30x75 feet has been built for W. D. Kyle's knitting mill, reported fully last week. Operations will be conducted under the title of the Kyle Hosiery Co.

THE Potter & Atherton Machine Co., of Pawtucket, R. I., has obtained the order for the cotton openers and lappers for the new mill to be built at Gaffney, S. C., by the Gaffney Manufacturing Co.

THE erection of a cotton mill with a capital of \$200,000 at Ridgedale, Tenn., is now being talked of. Mr. W. B. Farrar, of Dalton, Ga., is mentioned in connection with the enterprise.

IT is said that the McAden Mills, of McAdenville, N. C., contemplate a 100-foot addition to their weave room. The plant turns out plaids, cheviots and denims.

THE Mt. Vernon Co., of Baltimore, Md., is building an additional story to its No. 3 cotton duck mill at Mt. Vernon, and will equip it with considerable additional machinery. This new story is 50x75 feet.

THE Gastonia Manufacturing Co., of Gastonia, N. C., manufacturers of cotton warps and yarns, is contemplating the erection of a weave shed to use up the entire product of the mill. The officers of this concern are R. C. G. Love, president; J. F. Love, secretary and treasurer, and G. A. Gray, superintendent.

RAPID progress is being made on the new cotton mill now in course of erection at Pacolet, S. C., for the Pacolet Manufacturing Co. John H. Montgomery is president and treasurer of the company, and has contracted with the Petee Machine Works, of Boston, Mass., for the outfit of machinery.

MECHANICAL.

Notes on Machine Shop Practice.

By Albert D. Pentz.

THE item of catalogues is an important one in a factory, because there are but few articles needed in a shop that cannot be bought for much less money than they can be made for, and catalogues show who make them. Ordinarily there comes to most concerns about one circular or a catalogue every day on the average. Therefore the keeping and arrangement of them amounts to quite an item of time. It will be found to pay, however, and any good system soon will become an easy matter to operate. The way I find best is to number each one as it comes to hand, from one upward sequentially. Then to have a topical index book ruled like this form:

FORM.

Descriptions.	Size.	Maker.	No. on Catalogue.	No. on Circular.	Page.
Boring Mill.	10x12	Garvin.	73		8
" "	15x25	P. & W.	9		17
" "	16x36	"		55	
" "	12x40	Niles.	96		3
Breast Drill.	4 to 1	Brown.	39		6
" "	6 to 1	Smith.	108		16
Browne	&	Sharpe.	10, 58, 176		
" "	"	"	211, 230.		

This book must be big enough to give plenty of room, so that each subject may have a large number of spare lines to advance on. Then there should be a drawer for catalogues and one for circulars, in which they must be arranged numerically. The numbers should be written on a piece of paper and pasted on. Don't "destroy all previous catalogues," even though the authors of them demand it. At the same time there is much in all of them that does not need to be indexed for every kind of business.

MECHANICAL engineering is too broad a subject for any one man to master. Hence each one must specialize to do his best. He who designs steam engines well will be less useful for that purpose if he tries to embrace locomotives and assimilate all the data for that art also. The engineer who designs engine lathes may well make a specialty of that one type of tool. The person who studies gearing will not have time to do anything else. In the face of all this, most superintendents try to do all the following things: Manage his men, inspect their work, improve the quality, design new models, cheapen the cost and design tools. Now this last item is a specialty that some of us make our life work, and a life is not any too long for it. The difficulty is that youth departs before any art is mastered, and one does not become efficient at the right end of life to do enough work, even in a narrow specialty.

SUPERINTENDENTS hesitate before calling in an expert to consult with him on the small tool question. One will know that his tools are behind the age, and for that reason he does not care to be criticised. Another one will have tools that he has designed, and he will believe that they are the best possible for the purpose, and it is possible that an expert would confirm his

suspicion. The last man would find that tools can produce an amount of work much greater than hand work can be driven to by any one; that they do not make mistakes of judgment, and that they do good work at a fraction of hand cost. The tool expert will also be piece-work expert and be able to show the places in practice from which profits can be extracted. The officers of no concern should call in an expert to consult and keep its superintendent in ignorance of the visit until the moment of his arrival. That always makes trouble. The suggestion for help should come from the superintendent. It should be understood, however, that the tool engineer has come into American practice to stay, and the concern that does not have him this year will have him next year. Where he has gone once he will go again, because he is a help to the management, and because he makes good work easy to the workmen and shows him how he can increase his pay with less drudgery to himself and with profit to his employer.

EXPERIENCE indicates that grinding machines for cylinders and other circular work should feed faster, so that the wheel may pass over more length in a given number of revolutions. The feed ordinarily given tempts the workman to take too deep a cut. This develops heat at one spot or locality; at times produces disturbing expansions and forms ridges; it also reduces the size of the wheel very rapidly, and thus makes the production of a parallel job or a regular cone a difficult task. When, however, the feed is such that either the wheel or the work is rapidly and regularly thrust from one end to the other of the surface operated upon, a much more parallel cylinder will result. I favor as fast a feed as one-half inch to the revolution of a piece

of work one inch in diameter, preferring to secure the parallel effect first and to leave circular correctness to repeated visits from the wheel in many succeeding passages across. There is no question that more stock can thus be ground from circular work by a wheel, and with less reduction in the size of the wheel, than by the usual slow feed.

MACHINES to centre shafts and such pieces are well enough, but too much must not be expected of them. They are good to locate centres if their chucks are in good order. Ordinarily the centres in a heavy shaft are located too near the side that was on top when it was in the ma-

a very complete engine lathe for either foot motion or power, and provided with a straight or gap bed, according to the wishes of the purchaser. This lathe is built from entirely new patterns and designs, and is made with special care, good material, extra workmanship and accuracy.

The cone has four speeds, 8, 6½, 5 and 3½ inches in diameter, respectively, with a face for a 2-inch belt, and to insure smooth running at high speeds is turned inside and out. The spindle is of 2½-inch steel with a 1-16 inch hole through it, and runs in gun metal bearings, in which provision is made for taking up wear. The front bearing is 2 3-16 inches diameter and 3½ inches long, while the back bearing is

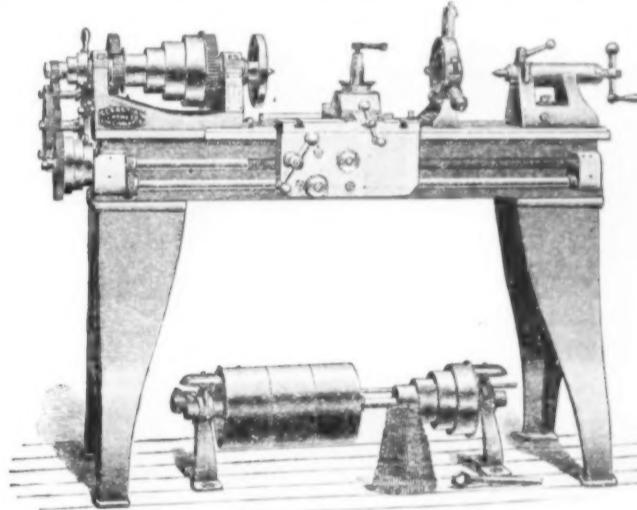


NEW WORKS OF THE SEBASTIAN LATHE CO.

chine. No matter how good such a machine may be or how well it has operated on a piece of work, it is evident that after a shaft is centred in it such shaft must be straightened, and this straightening will disturb the alignment of the centres. Then before the turning operations are begun they should be reamed again by an old-fashioned square centre in the turning lathe. The drilled relief hole at the bottom of the centre should be made concentric to it at the same time. If these corrections are not made there will be a constant liability of the turning changing in truth as it progresses towards completion, in consequence of the centre holes

2 3-4 inches long. The tail stock has an adjustable side movement for turning tapers.

The back gear is thrown in or out by the usual cam motion. Both an independent rod and a screw feed are provided, the former being especially designed for ordinary turning, and the latter for screw cutting alone. Either right or left hand threads can be cut, or, in ordinary turning, the feed may be in either direction without change of gearing, as this feature is provided for in an improved reverse motion. The carriage is of the most approved design, and is gibbed to the bed both front and back, thus suiting it for heavy work.



BACK-GEARED SCREW-CUTTING LATHE.

being worn or strained toward one side. Every man who turns work that has been centred on a machine will remember recent incidents when his centres "have changed on him."

Back-Geared Screw-Cutting Lathe.

The Sebastian Lathe Co., of Cincinnati, Ohio, has recently moved to its new plant at the corner of Harrison and Culvert streets, where the company has recently erected a large and commodious shop with first-class shipping facilities. This move was necessitated on account of not having sufficient room in the old works to accommodate the rapid growth of trade.

Recently this company has brought out

All parts where steel is required are made of the best quality of metal, and every part is securely protected from chips and dirt, thus insuring long wear and durability to the most vital and costly parts of the lathe.

The bed is thoroughly braced throughout, has four Vs and is planed true and polished. The rack and all gears used are cut from solid metal, insuring strength and trueness. One valuable feature of this lathe is the gap in the bed. This is directly under and in front of the face plate, and will permit a swing of nineteen inches in diameter and six inches in width. This is invaluable for turning pulleys, cranks, patterns and similar pieces, and is provided without any weakening of the bed at

this point, and so as to allow the carriage to run over the gap and connect on the opposite side without letting down. Whether a gap shall be in the lathe is optional with the purchaser, as both forms are made.

Either foot motion or countershaft, or both, may be had as wanted. The fly-wheel for the foot motion weighs 150

swing over ways is fifteen and one-half inches and over compound rest ten inches. The pulley on the countershaft is eight inches diameter by 3-inch face, and is calculated to make 140 revolutions per minute. This lathe will cut all threads from four to forty, including eleven and one-half for pipes; total weight about 1,400 pounds.

at its works a machine of its own design, upon which the tests of this and other metals have been made. By reference to the accompanying illustration, the testing machine will be seen. This device, while differing somewhat in structure from the one used by the United States government, gives practically the same results as the official machine. The results of a series

shown. The left-hand plug fits the box loosely and is subject to pressure from the lever which bears on the plug at the point F. Upon the outer end of the lever a series of weights are hung as shown by mark D. The lever fulcrums in the arm just above the left-hand box. A belt is run to the machine and drives the pulley B with a speed of 2,000 revolutions per minute. The weights upon the lever A exert a pressure of 2,000 pounds upon the plug in box C. The plugs are lubricated with the best oil. The thermometer X is dropped into an oil well in the plug, and in this manner the resistance, heat and wearing quality of the metals is determined. The following table shows the results attained:

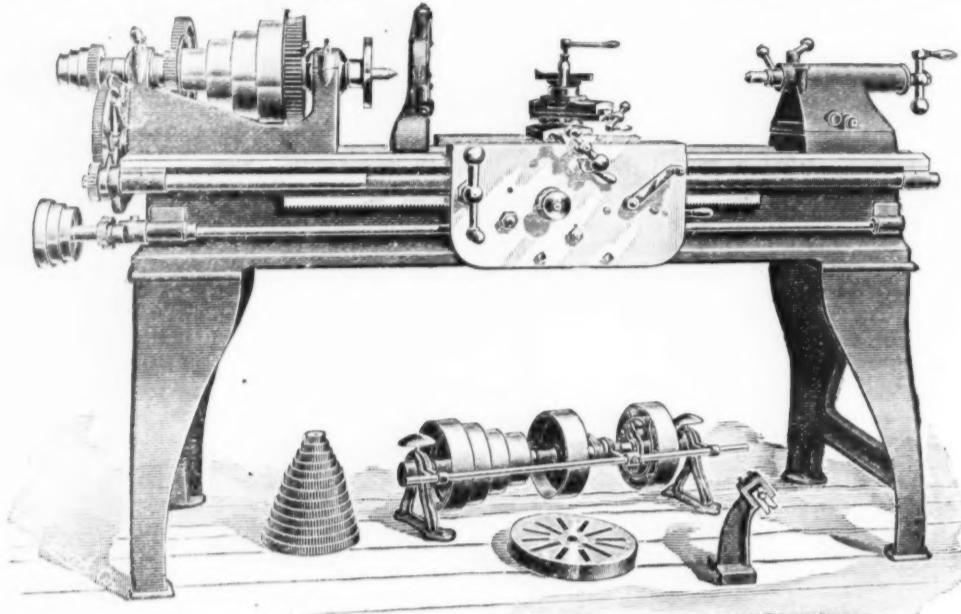
COMPARATIVE TESTS OF BEARING METALS.

	Revolution per minute.	Pressure, Pounds.	Temperature, Degrees.	General results.
A.....	1,500	1,836	330	{ Oil holes and channels filled.
B.....	2,000	2,000	310	{ Shaft sunk three-eighths of an inch.
C.....	1,500	1,612	320	{ Melted, stuck on shaft.
D.....	600	1,836	330	{ Melted, plug cut and sanded.
E.....	1,500	1,836	310	
Electricon.....	2,000	2,000	385	Excellent condition, greatest degree of heat 185.

The above comparisons speak for themselves, and the superiority of the metal in question is very evident. The claims made by the company are that the metal wears perfectly smooth; that it will not cut the journal; that it is adapted for all bearings, and that under the same conditions it will wear twice as long as any metal now in use; finally, that it will save 75 per cent. in cost of lubricating. The company, in a small leaflet on the subject, offers to prove its claims by actual competition.

Press for Making Lock-Seams.

The illustration presented herewith shows a power press with special horn and



A NEW 14 INCH ENGINE LATHE.

pounds. The pulleys of the countershaft are 9x5 inches, and require a speed of 190 revolutions. Each lathe is furnished with an 8-inch face-plate, two pointed centres, steady rest, wrenches and gears to cut all standard threads from 5 to 36. A machine taking 48 inches between centres, with a 7-foot bed, weighs 1,100 pounds.

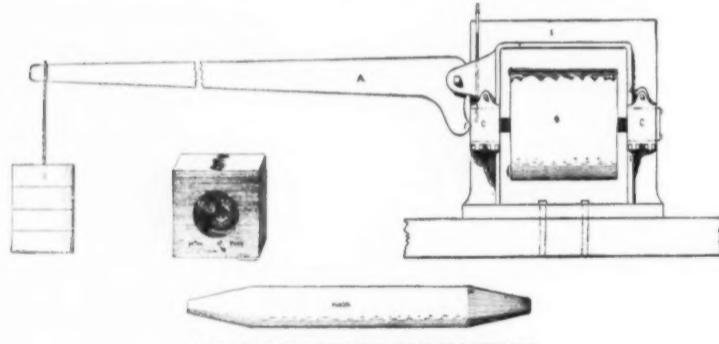
A New 14-Inch Engine Lathe.

The illustration presented herewith shows the new and improved 14-inch by 6 foot bed engine lathe manufactured by Dietz, Gang & Co., of Cincinnati, Ohio. The lathe has a hollow spindle one and three-quarters inches in diameter, the hole being three quarters inch diameter, running

in the center of the bed. The pulleys of the countershaft are 9x5 inches, and require a speed of 190 revolutions. Each lathe is furnished with an 8-inch face-plate, two pointed centres, steady rest, wrenches and gears to cut all standard threads from 5 to 36. A machine taking 48 inches between centres, with a 7-foot bed, weighs 1,100 pounds.

of tests made with different metals is given in tabulated form in the accompanying table. The different letters represent the different metals now upon the market for use in bearings. Only those best known have been tested.

The metal to be tested is run in molds which are nearly square, and which form the metal into the shape shown in the illustration. In one side of the plug a conical hole is made which conforms in



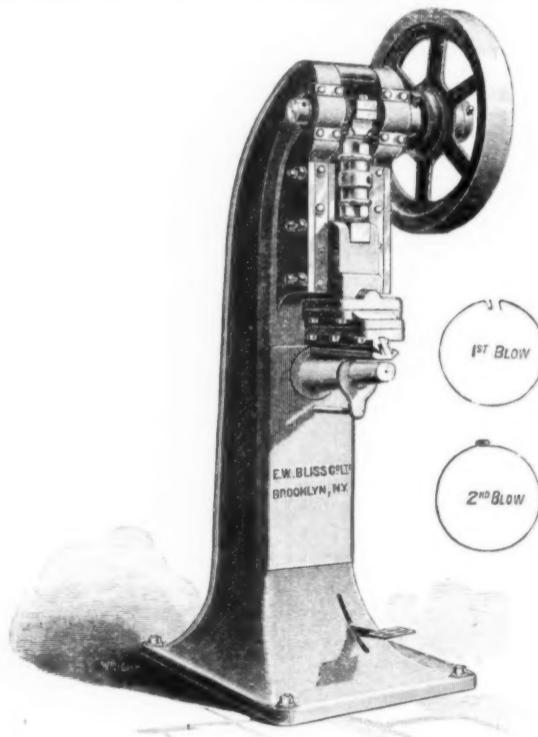
MACHINE FOR TESTING BEARING METALS.

in phosphor-bronze boxes, the front bearings being two inches diameter by three and three-quarters inches long and the back bearings one and nine-sixteenths inches diameter by three inches in length. The cone pulley has four steps for a 2-inch belt, the largest nine inches diameter and the smallest three and three-quarters inches. The back gear is strongly made, with double gear on spindle for screw cutting, independent rod feed, power cross feed and reverse motion in the apron. In all, it is one of the most complete machines on the market, and is made extra heavy so that it will do the work of a 16-inch machine. The lathe can be made with a plain raise and fall or compound rest as desired.

The centres are made to conform to Morse taper No. 3, and the distance between them is three feet two inches. The

question, but the results thus far attained are far from satisfactory. The Electricon Co. has given the subject much attention, and after a series of exhaustive experiments and the expenditure of a large amount of time and capital has succeeded in producing an alloy that appears to be the means of taking a long step toward the desired result, i.e., the least possible resistance in a bearing which accommodates a high-speed axle, shaft or spindle.

Electricon is a soft metal, but it is peculiar unto itself from the fact that while it is remarkable for its softness, it at the same time is extremely brittle, and is composed of such alloys as to allow it to be tempered to almost any degree of hardness. The metal appears of a very fine grain, and when broken it resembles a piece of cast steel in structure. The company has



PRESS FOR MAKING LOCK SEAMS.

shape to the end of the mandrel which is also shown. Two of these plugs are used in the test, one in each box of the machine. The mandrel is put through the pulley and held by set screws, the plugs are put on the ends. These plugs are then put into the boxes C C, which have hinged fronts. The plug in the right-hand box is held in place by the plate on the back of frame as

force, designed to facilitate the manufacture of lock-seamed tinware. It obviates the necessity of using a bar-folder for forming the hooks on the body blank before rolling same on the forming machine. Its operation is exceedingly simple and reliable. The blank is first formed in the rolls, then placed in the machine, which forms the two hooks at one stroke and

closes them at a second operation. The advantages obtained are:

First—That the blank is rolled in the flat, not having any hooks previously formed to interfere with the operation.

Second—That both edges are hooked at one blow.

Third—That the hook forming and closing are done in one handling.

Fourth—That the seam is more uniform than if started in the bar-folder.

The horn can be arranged to throw the seam inside or outside. All sizes of bodies up to fourteen inches long can be done on the one horn. These horns and forces are not adapted to be operated in presses having more than $\frac{1}{2}$ -inch throw.

These machines are built by the E. W. Bliss Co., Limited, Brooklyn, N. Y.

A Handy Tool for a Foundry.

One thing every founder complains about is the defacing and splitting of patterns in withdrawing them from the sand; besides this, the withdrawing pin ordinarily used frequently slips and has to be driven in again for a fresh hold, thus spreading the sand around the pattern and producing the same effect as too much

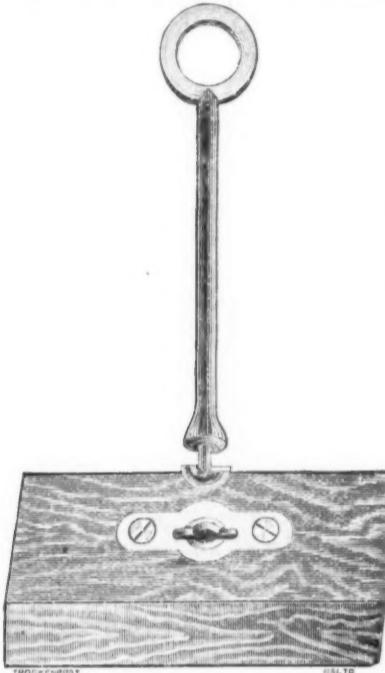


FIG. 1.—A HANDY TOOL FOR A FOUNDRY.

rapping. These difficulties are overcome by using the rapping plate and draw key shown in the accompanying cuts, made by Wilson & Travers, 602 and 608 Second street, Baltimore, Md.

Fig. 1 shows the plate as set in the pattern with the key above it, and Fig. 2 shows the underside of a larger size plate, showing the cam arrangement by which

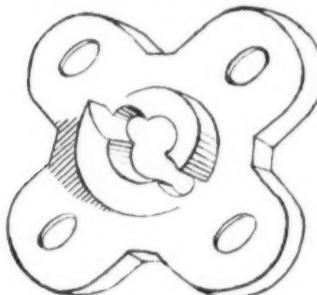


FIG. 2.—A HANDY TOOL FOR A FOUNDRY.

upon turning the key the pattern is started from the sand. The plates are so made that they can be fitted into auger holes in the pattern, thus enabling them to be easily and speedily placed in patterns. Six sizes are made in all, and the makers solicit a trial order, feeling assured that actual use will convince any founder of its merits.

A New Regulating Switch.

A step in the direction of domesticating electricity has been taken by the Electrical Supply Co., of Chicago, in placing the new regulating switch illustrated in these columns on the market.

The object of the invention is a switch that will regulate the amount of light pro-



A NEW REGULATING SWITCH.

duced by an incandescent lamp from no light to full candle-power without an excessive loss of energy in the resistance. This the inventor, Mr. Chas. Wirt, claims to have accomplished in the new device. The switch is made of incombustible material, and is neat and tastily designed.

Individuality in Machinery.—Penfield Pug Mill.

Editor Manufacturers' Record:

Many of us have read of the man whose perceptive and analytical powers were so

sight in many extensive brick-making districts, particularly those making soft mud brick from mild clays. When, however, the wire-cut brick machines were introduced and the tougher, stronger, more tenacious clays were used for brick-making the inadequacy of the wooden clay mixers was readily apparent, and from that time dates their steady and marked improvement. The best types of pug mills are now constructed in a massive and substantial manner, so little resembling the early crude and imperfect forms that a novice would hardly recognize any connection between them or that they were designed for a common purpose.

The latest effort we have observed in this line weighs in the neighborhood of 11,000 pounds and is constructed throughout of the best of iron and steel. The tub or tempering cylinder is horizontal and tapering, so that the clay as it moves forward is compressed and pugged under greater pressure, ensuring more thorough preparation. The tub is six feet long and made in sections, facilitating cleaning or getting at the knives or auger. It is also provided with a hinged front.

The knives are wrought iron with steel face, securing all the wearing advantages of steel knives, while if a stone or other hard substance should get between the knife and tub the knife would bend instead of breaking, and by straightening would be as good as new. The knives are keyed in position and can be removed without taking out the shaft. They can also be adjusted

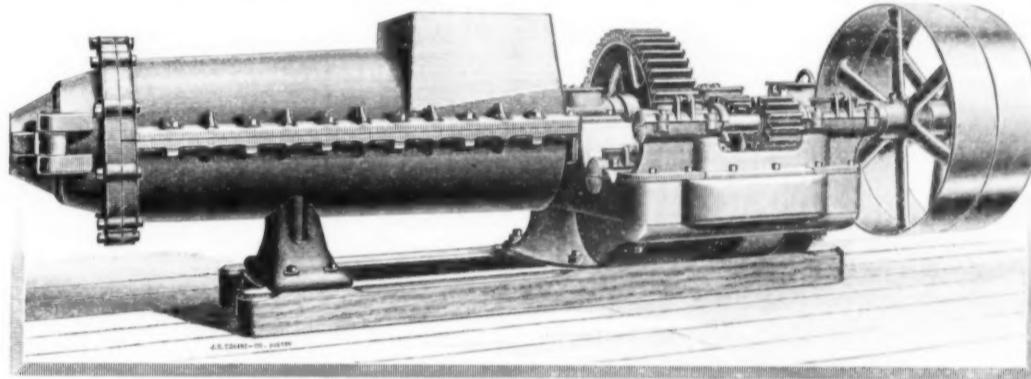
machine is self-contained and mounted on sills, and is in every way a striking example of modern forethought and skill.

That such a degree of attention and skill should be devoted to the construction of even pug mills and other kindred clayworking machinery indicates that the machinery manufacturers are on the alert, and if the brickmakers were as ready to observe and adopt improved appliances as the manufacturers are to devise, perfect and produce them, a new era in brick-making would soon be apparent. At least, such is the opinion of an INVESTIGATOR.

[We illustrate herewith the machine above referred to by our correspondent. It is known as the Penfield No. 15 taper tub pug mill, manufactured by the well known firm of J. W. Penfield & Son, Willoughby, Ohio.—ED.]

Electrical Notes.

A DEMONSTRATION of electric cooking was given the other day at a London exhibition. Electric heaters were shown in various forms and applications, including frying pans, saucers, teakettles, foot-warmers, flat irons and curling iron heaters. In nearly all cases the heating was done by a number of fine zigzag wires laid against the surface of an iron plate and imbedded in a non-conducting enamel, forming a back to the plate. A temperature of about 260 degrees was readily obtained. It was estimated that at the London price of current for lightning, the cost of heating a



PENFIELD NO. 15 TAPER TUB PUG MILL.

dwarfed that in observing a number of objects of a given species no single one conveyed a distinctive impression to his mind, but all were alike to him, no matter how much they might vary in beauty of formation, perfection of development or peculiarity of configuration.

"A cowslip by the water's brim
Only a cowslip was to him."

We would hardly congratulate such an individual upon his acquirements in this line, and yet it is a fact that we unconsciously imitate him in other lines, notably that of various forms of machinery, and fail to note the distinctive and advantageous features of new and perfected appliances. This is a state of affairs not to be commended, for originality, individuality and progress in the successful development of machinery should be an interesting study, even if its neglect did not entail upon us operating our factories at disadvantage or even loss because of indifference or tardiness in investing and reaping the benefits secured by advanced thought and effort.

One of the oldest forms of clay-preparing machinery and one familiar to brickmakers everywhere is the pug mill. Originally framed of wood, with wooden shaft, and operated by the inevitable wooden sweep with horses attached, these machines were serviceable even in their crude form, as is evidenced by the fact that they were used for so many years without any effort being made to produce anything better. Even at the present day they are a familiar

to any required angle in order to secure the desired results as to tempering and capacity. For clay requiring considerable pugging, the knives can be arranged with less angle, while if less pugging is needed and large capacity is desirable, their angle can be readily increased, thus securing the desired result in either case. This feature (permitting the adjustment of the knives to suit the particular quality of clay handled and the amount of preparation necessary) is an especially desirable one, ensuring any manufacturer of the best possible results in his own material.

The auger is of extra hard white metal, nicely ground and polished. The end thrust of the main shaft is sustained by two polished, hard metal thrust plates held in an oil chamber, and so arranged as to secure thorough lubrication of the wearing surfaces, thus reducing the friction and wear. The thrust plates are readily removable and can be replaced at slight expense. Means is provided of adjusting the shaft lengthwise to take up the wear of the auger, thus keeping the machine up to its full capacity at all times.

The balance of the machine commends itself to the observer by its substantial and effective construction, the main shaft being extra large and strong, the gearing extra heavy and of most approved design with steel pinions, and the journals long and convenient for oiling. The back frame holding all the bearings is extremely heavy, making it impossible for the bearings to get out of line and ensuring rigidity. The

6 inch frying pan would be a penny an hour; but at the reduced day price of electricity the cost would not exceed a half-penny an hour, or just double that for a 16 candle incandescent lamp.

IN Switzerland, near Mount Cenis, a plant has been erected to utilize the water-power of the falls of the Valoire, a tributary of the river Arc. A canal 2,625 feet long, six and one half feet wide and three and three-quarters feet deep, with a fall of .22 per cent., passing 106 cubic feet of water per second, has been dug from the river to a reservoir. The entire hydraulic plant is capable of furnishing 6,000 horsepower. At present only one establishment—an aluminum works—has been connected. Water flows from the reservoir through a 24 inch main to a turbine connected with a dynamo running at 135 revolutions and giving an output of 4,000 amperes at 500 volts.

THE Coast Line Electric Railway from Savannah, Ga., to Thunderbolt has been completed and formally opened. On the trial trip a large party went over the line. Everything worked smoothly and to the satisfaction of the company. The road will shortly be extended to Mount Hope and connect with the City & Suburban line.

THE Baltimore Electric Smelting Co. is enlarging its works, and when completed will receive the entire output of the Anaconda copper mines. Nearly 4,000,000 pounds of copper ore per month will be treated by the electrolytic process.

IRON MARKETS.

Philadelphia.

[From our own Correspondent.]

PHILADELPHIA, September 14.

The general tone of the iron market shows little change from the conditions of a week ago. While the demand for finished material continues active, the competition for the large amount of business in sight has caused prices to become weak and irregular for any deliveries after the present month. Forge and low phosphorus pig irons are moving more freely, and, while prices show no quotable change, a firmer feeling has developed on the part of producers. In leading brands of foundry pig iron there is reported a scarcity on the part of some of the furnaces, but in other cases there is an abundance of good iron to be had, holders insisting, however, on full quoted rates. At present quotations furnace agents are not disposed to accept contracts for long-time deliveries, and higher prices are asked for winter deliveries, but it is equally true that buyers are holding off placing orders much beyond their present needs, believing that little change in prices will take place soon. The Thomas Iron Co., at its meeting held in New York yesterday, concluded to continue for the present quotations of \$15.00 for No. 1 X foundry, \$14.00 for No. 2 X foundry, \$13.50 for No. 2 foundry plain, and \$13.00 for gray forge, these being the same prices which covered tidewater deliveries of Thomas iron made during July and August. Eastern pig iron stands at previously quoted figures, which are well maintained. Virginia brands are also firm at the prices asked. Bessemer pig iron has shown an increase in price of from 25 cents to 50 cents a ton, with the market firm. The quotations for foundry and forge grades are as follows, tidewater delivery or its equivalent, with the usual concessions for points 100 miles west or south of here:

Standard Pa. No. 1 X	\$15.00	-\$15.50
" No. 2 X	14.00	-\$14.50
" Forge	13.00	-\$13.50
Southern Coke, No. 1 foundry	14.25	-\$15.00
" No. 2 "	13.50	-\$14.00
" Gray Forge	12.50	-\$13.25

Pittsburg.

[From our own Correspondent.]

PITTBURG, September 14.

A slightly better market is at hand, and is accompanied by a corresponding feeling of security. Were it not for the fact that the depression is so remarkable, however, it is unlikely that the improvement that has arrived would be taken note of. As it is, the indication is taken to mean something better than the change itself. It is simply noticeable and no more, but there is a general expectation that the market will be improved upon from month to month.

Business transactions are not plenty, and those made are confined to small quantities of material, Bessemer and gray forge having the preference. The sales, however, are not general, which is a reminder that the situation still needs a great deal of improvement before it will become anything like fair. About all the business that is done is confined to very few firms, fully 99 per cent. being in a state of nothingness. This fact will illustrate just to what extent the improvement has taken hold. Beyond a few sales in small lots of pig iron, there may be said to be nothing. As the business of this market is limited to the local district's production, except some little Southern charcoal iron, the chances for an enlargement are not many. A hopeful sign is the intention of furnacemen, so it is stated, to blow in the stacks recently closed and go ahead with the production. This applies to the Mahoning and Shenango valleys as well as to Pittsburg, and although the furnacemen say very positively that they are doing a business that amounts to nothing, as there is no profit on any grade, especially the

more commonly used, their resumption of operations under such conditions sounds very strangely; in fact, the statement is common that they are daily refusing business at the prices quoted in the market. In spite of all this it is very clear that if the demand were present there would be plenty of sales, as there is a profitable point somewhere. The quotations are unchanged, except that gray forge has advanced a shade.

Gray Forge	\$12.60	-\$12.75
Mill Iron	12.50	-\$12.75
Foundry No. 1	14.35	-\$14.60
" No. 2	13.35	-\$13.60
Bessemer	13.80	-\$14.00

In regard to the slight improvement in Bessemer it must be stated that while it is quoted at \$13.80 to \$14.00, the sales being made are as low in cases as \$13.75 to \$13.85, in spite of the claim that less than \$14 will be declined.

Wheeling.

[From our own Correspondent.]

WHEELING, W. Va., September 14.

As will be remembered, it was stated last week that everybody was predicting for the immediate future a general and very considerable improvement in trade. This was given as good reason for believing that better things were not far removed, and the occurrences of the past week show that prediction to have been well founded. Since the last report there has been a very general improvement and picking up in business all along the line. Manufactured iron of all sorts, soft steel and even muck bar are in first rate demand, and there is a very general stiffening and an inclination to insist on better prices.

While, of course, the pig iron market has not felt the benefits of the improving tendency to any great degree as yet, its turn will come a little later on. The pig iron business is so dreadfully overdone that it cannot be expected to pulsate with every throb of the market. So long as a great deal more pig iron is made than is needed for immediate consumption, there cannot be any great awakening. However, it must be said that there has been a moral, if not a physical, improvement in the market this week.

Prices that would buy iron a week ago are now looked upon by manufacturers as a little lower than the market justifies, and they are not tumbling over each other to sell their product below living prices.

All the mills in the Wheeling district, including both the muck bar and steel mills, are once more in full operation. This has resulted in a considerable increase in the capacity for consuming pig iron, and as a result the volume of business is considerably strengthened. Southern forge irons still continue to hold a good place, and though no sales have been made this week that are given to the public, it is known that several good sized dickers are on.

The Bessemer market is still over-supplied, and is likely to be for some time to come, even though the improvement assumes the proportions that it is hoped it will.

The demand for foundry iron has slackened up just a little, but the generally reported improvement in the hardware trade will likely remedy this.

Quotations this week are as follows:

No. 1 Foundry	14.25	-\$14.50
No. 2 Foundry	13.25	-\$13.50
Bessemer	13.75	-\$14.00
Northern Gray Forge	12.75	-\$13.00
Good Tough Southern Iron	12.50	-\$12.75

Chicago.

CHICAGO, September 10.

The pig iron market in this district remains practically the same as reported last week. A good amount of business in Northern and Southern cokes is being transacted, with the usual concessions to large cash purchasers by furnaces with plenty of iron on hand.

Lake Superior charcoals are quiet, prices remaining unchanged.

Business seems good in all lines of iron manufacturing, and consumption of pig iron is very heavy.

We quote for cash f. o. b. cars Chicago:

Southern Coke No. 1 foundry	\$14.50	-\$15.00
" No. 2 foundry	13.50	-\$14.00
Southern Coke No. 1 soft	13.50	-\$14.00
" No. 2 soft	13.00	-\$13.50
Ohio silveries No. 1	17.00	-\$17.50
" No. 2	16.00	-\$16.50
" strong softeners, No. 1	16.50	-\$17.00
" No. 2	15.50	-\$16.00
Lake Superior charcoal No. 1 to 6	16.50	-\$17.50
Tennessee charcoal, No. 1	16.50	-\$17.50
Standard Alabama car-wheel	20.00	-\$22.00

ROGERS, BROWN & MERWIN.

Cincinnati.

CINCINNATI, September 10.

The heaviest transactions in Southern irons for the past week have been in gray forge grade, and mostly with large cast-iron pipe works. One trade was for 10,000 tons, another for about half that and several smaller ones, aggregating 20,000 tons of this one grade.

At the close negotiations are in progress for still larger quantities. The lowest point touched in any of the transactions was \$8.25 cash Birmingham. One offer for 20,000 tons at fifteen cents below this was promptly declined, and a disposition was shown by leading sellers to advance this grade, which is the basis for Southern iron values, to \$8.50. Indeed, one large sale was closed at a figure that gave the furnace \$8.40 at Birmingham cash. It may be regarded as settled that the decline in Southern irons has stopped, and that instead of further concessions chances favor a small advance. Shipments from nearly all furnaces have exceeded current make, and sales are largely in excess of shipments. For the first time the furnacemen actually begin to feel indifferent about taking business, unless at an advance, which they do not desire to announce until they are sure that the improvement is something more than a mere spurt.

There is also a like feeling of indifference among leading Northern makers. Large gilt-edge orders offered at a cut from asking figures have hardly received respected consideration. On the other hand, buyers here and there show a lively desire to place long contracts, and concede that the turn is not far off. Most consumers, however, are so thoroughly convinced that the decline has not culminated that they continue to buy from hand to mouth.

A marked feature of the past week has been quick shipment orders. The wires are called into requisition to hasten delivery and trace cars to prevent foundries from running out of stock.

On the whole the tone is perceptibly brighter, and nothing but a serious cholera scare, it is thought, will change the favorable prospects.

We quote for cash f. o. b. cars Cincinnati:

Southern coke No. 1 foundry	\$13.25	-\$13.75
No. 1 soft	12.25	-\$12.75

Hanging Rock coke No. 1

Hanging Rock charcoal No. 1

Tennessee charcoal No. 1

Jackson Co. stone coal No. 1

Southern coke, gray forge

Standard Alabama C. W.

Tennessee C. W.

Lake Superior C. W.

ROGERS, BROWN & CO.

Louisville.

LOUISVILLE, September 10.

There is nothing new to be said about the iron market. Buying has been very light during the past week, and orders have been mostly in carload lots. Buyers do not seem disposed to contract for their future requirements so long as prices are so uncertain, nor are they desirous of carrying part of the stocks as long as they can get furnaces to carry them, and can buy from week to week at lower prices.

We quote for cash f. o. b. cars Louisville:

HOT BLAST FOUNDRY.

Southern Coke, No. 1

" No. 2

" No. 3

" Charcoal, No. 1

" No. 2

FORGE IRONS.

Neutral Coke

Cold Short

Mottled

CAR WHEEL AND MALLEABLE IRONS.	
Southern (standard brands)	\$20.00
" (other brands)	18.50
Lake Superior	19.50
GEO. H. HULL & CO.	

St. Louis.

ST. LOUIS, September 10.

No improvement in the market, either in sales or prices. Iron is ridiculously low, and the question buyers are now weighing is, can iron decline further without the furnaces giving way under the pressure? Those who are in the negative are taking advantage of the present market and covering their requirements for several months to come.

We quote for cash f. o. b. cars St. Louis:

Southern Coke No. 1	\$13.75	-\$14.25
" No. 2	12.75	-\$13.25
" No. 3	12.50	-\$12.75
" Gray Forge	11.75	-\$12.00
" Charcoal No. 1	15.50	-\$16.00
" No. 2	15.00	-\$15.50
Missouri Charcoal No. 1	14.50	-\$15.00
" No. 2	14.00	-\$14.50
Ohio Softeners	16.50	-\$17.00
Lake Superior Car Wheel	17.50	-\$18.25
Southern " "	18.25	-\$19.75
Frick's Connellsville Foundry Coke	5.65	

ROGERS, BROWN & MEACHAM.

Cumberland Coal Shipments.

The shipments of coal from the Cumberland region for the week ended September 10 and for the year to that date have been as follows:

Companies.	Week.	Year.
	Tons.	Tons.
Borden Mining Co.	5,905	15
Consolidation Coal Co.	21,442	8
Union Mine	4,701	00
George's Creek Coal & Iron Co.	9,523	07
Swanton Mining Co.	5,048	00
Potomac Coal Co.	3,334	04
Franklin Cons. Coal Co.	2,795	15
Piedmont Cumb. Coal Co.	44,461	04
Barton & George's Creek	5,405	66
Valley Coal Co.	4,310	11
Big Vein Coal Co.	1,612	04
Anthony Mining Co.	66	00
W. Va. C. & P. (Elk Garden Mines)	7,768	15
Atlantic & George's Creek Coal Co.	30,180	19
Davis Coal & Coke Co.	2,173	00
Thomas Mine	4,057	02
Davis and Elkins Mine	2,093	02
Cumb. Coal Co. (Doughlas Mine)	1,622	00
Elk Garden Big Vein Min. g Co.	694	68
Han. shire Mine	85	12
American Coal Co.	181	18
Maryland Coal Co.	9,817	02
New Central Coal Co.	7,833	11
Big Vein Coal Co.	4,855	12
Total	96,639	66
Previously	2,479,977	08
Aggregate	2,576,616	14

COKE SHIPMENTS OVER WEST VIRGINIA CENTRAL & PITTSBURG RAILWAY.

Companies.	Week.	Year.
	Tons.	Tons.

PHOSPHATE TRADE

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, September 14.

The market for phosphate rock has undergone but little change in the past week, and the volume of trade has been quite limited. There is no prospect of a revival in trade for several weeks to come. Shipments of fertilizers are liberal, and few contracts are making for new business at the moment. Receipts of rock at this port have been light during the current month. Cargoes reported are the schooner David Beard, from Charleston, with 1,350 tons, and the schooner Clara Goodwin, from Punta Gorda, with 950 tons. Sales for the week have been light, and we hear of one cargo land pebble 65 to 70 per cent. guaranteed \$6.50 at Baltimore, and two cargoes future delivery in treaty at same figures. The ruling figures at the close are \$4.75 for Ashley river and \$5.00 for Charleston rock. River rock, 58 per cent., is steady at \$4.50 f. o. b. In Florida rock there is a steady tone at the late decline in values. River pebble is steady at \$4.00 to \$4.25 f. o. b. Charlotte harbor and Tampa 60 per cent. product, and \$3.50 to \$4.00 for 50 to 55 per cent. product. Land pebble closes at \$4.50 to \$5.00 f. o. b. Tampa 68 to 72 per cent., the latter being equal to 10 cents per unit delivered at New York and Baltimore, at which late sales have been made. Florida boulder, 75 to 80 per cent., is steady at \$8.50 per ton f. o. b. Fernandina. We quote as follows:

Phosphate rock f. o. b. Charleston..... \$4.75@5.00
" " Peace river..... 4.00@4.50
" " Baltimore..... 6.00@7.00
" (ground)..... 8.50@9.00

CHARLESTON, September 13.

The phosphate market has undergone but little change during the past week, and transactions have been limited in character. Throughout the phosphate region of this State the outlook is a shade better, and many improvements in plants are in progress, while there is a prospect of several companies starting up again after a period of rest. Advices from Europe are in the main of a better character, while prices are a shade firmer. In local circles during the week values have been steady at \$4.00 to \$4.25 free on board, and \$5.00 to \$5.25 for hot air dried. There is very little inquiry for ground rock, and the quoted figure is \$7.00. In fertilizers values are unchanged, with quotations as follows: Acid phosphate is quoted \$12.00 to \$12.50, and ammoniated fertilizers, 1 per cent., \$17.50 to \$18.50; for 2 per cent., \$18.00 to \$19.00, and for 2½ per cent., \$18.50 to \$19.50. Coastwise freights are irregular for phosphate rock, the quoted rates being \$1.80 to Baltimore, \$1.90 to Richmond and \$2.25 from Ashley river to New York. The comparative exports of crude phosphate rock and ground from this port from September 1, 1891, to September 9, 1892, and for the same time in 1890, are as follows:

	1891-92.		1890-91.	
	Crude	Ground	Crude	Ground
Baltimore.....	1,355	.....	2,040	.....
Philadelphia.....	.....	.....	.....	.....
Boston.....	.....	.....	.....	.....
Elizabethport.....	.....	.....	.....	.....
Wilmington, Del.	.....	.....	747	.....
Barren Is., N. Y. ....	.....	.....	.....	.....
New York.....	.....	.....	.....	.....
Mantua creek.....	.....	.....	.....	.....
Weymouth.....	515	.....	.....	.....
Richmond.....	.....	.....	.....	.....
Seaford, Del. ....	.....	.....	.....	.....
Newtonck., N. J. ....	.....	.....	.....	.....
Wilmington, N. C. ....	.....	.....	.....	.....
Welsh Point.....	.....	.....	.....	.....
Orient, L. I. ....	.....	.....	.....	.....
Other ports.....	.....	.....	.....	.....
Total exports.....	1,870	.....	2,040	747
Grand totals.....	1,870	.....	2,040	747

The Foreign Phosphate Trade.

South Carolina and Florida phosphates continue in favor on the other side of the Atlantic, and latest advices are generally favorable. The London market is steady.

and quotations at the close on the 9th instant are as follows: South Carolina, 7½ d.; Florida hard rock, 15 per cent., 9½ d. to 9½ d., and Florida pebble rock, 6 per cent., 7½ d. Couper, Miliar & Co., of London, in their circular, which contains the latest important phosphate news, says: "We have no improvements to report in business, but prices of raw materials are steady, though sales are difficult to make. From Florida advices we gather that large shipments are being made of hard rock and pebble phosphates, even though this is the wet season of the year, and the importance of this comparatively new source of supply shows itself more and more as time goes on. The low prices ruling make raising at a profit impossible in some of the older-worked deposits, which, however, does not tell much, the Florida supply being so ample. With dearer winter freights prices will doubtless be advanced. In mineral phosphates Canadian shipments so far have in some cases been somewhat unreliable in quality. There is at present nothing desirable offering. South Carolina is offering at 7½ d.; Florida hard rock, 75 per cent., is selling at 9½ d. to 9½ d., and pebble, 60 per cent., at 7½ d. Ground Somme is steady at 11½ d. for 75 per cent. and 10½ d. for 70 per cent. basis c. i. f. London." Other fertilizer ingredients continue steady, and latest advices from authentic sources report a moderate demand. In bone ash, bones and meal no sales of cargoes are reported, and quotations are nominal at £3 10s. to £3 12s. 6d. for ash, £4 to £4 2s. 6d. for bones and £4 2s. 6d. to £4 5s. for meal, as to quality. Sulphate of ammonia is steady at about £9 17s. 6d. to £10 per ton. Nitrate of soda closes to-day (9th) at £8 10s. per ton in dock warehouse. Fish guano, London make, is sold out to the end of the year. Ground hoofs and horns are held for 8s. 6d. ex ship London. Muriate of potash remains unchanged at £7 12s. 6d. per ton on basis of 80 per cent. in bags; kainit, 24s. 9d. in bulk f. o. b. Hamburg.

The present status of the Florida phosphate industry is very ably presented by J. M. Lang, of Messrs. J. M. Lang & Co., of Savannah, Ga. In his carefully-compiled report he says: "The high grade of phosphate known as boulder rock, testing 75 per cent. and over of bone phosphate of lime, is being mined at present by thirty-five companies in Florida. The total daily capacity of their plants, if they were all worked under pressure to their full limit, would be 2,285 tons. Their average output though, working under ordinary circumstances, would be 1,281 tons per day. The number of working days in the mining of this class of rock is 200 per annum, wet weather interfering considerably with operations. Experience has demonstrated that from various causes the total output for a year will hardly more than reach half of what might be expected from the average daily capacity and the number of days worked. Fourteen companies for mining this class of rock either have their plants closed down or they are in course of construction. About 150 tons daily would be the average output of these companies if they were in operation. During the year ending June 30, 1892, the total shipments of the Florida high-grade rock were 132,928 tons. In the preceding year, the first in which any phosphate was mined in Florida, the shipments were 38,393 tons. This makes the total amount shipped since the discovery of the rock 171,321 tons. Prices for the boulder rock have fluctuated from \$17.50 to \$8.50 per ton." Of pebble rock Mr. Lang says: "The mining of river and land pebble is at present conducted by fifteen companies, the total capacity of whose plants is 1,210 tons, but whose average daily output hardly passes 600 tons. Ten companies for the mining of this rock, which tests 60 to 65 per cent. of bone phosphate of lime, are either closed down or just putting up plants. The total capacity

of these plants is about 535 tons per day, and if working their output would be about half that amount. The total shipments of pebble rock for the year ending June 30, 1892, were 75,921 tons. For the previous year the shipments amounted to 32,325 tons, making a grand total of 108,246 tons of pebble rock shipped from Florida. Prices have ranged from \$7 to \$4 per ton. The total shipments of both classes of rock from Florida since mining began there amount to 275,507 tons. For July and August of this year shipments were as follows: Boulder rock 25,000 tons, and pebble rock 15,000 tons. Florida now ships about half the high-grade rock consumed by the entire world."

Phosphate Rock in England.

From the London agency of the Anglo-Continental (late Ohlendorff's) Guano Works comes a very interesting circular on the phosphate industry. Of the general phosphate situation it says: "The Peace river phosphate has gained a good reputation, and is considered by many preferable to Carolina river phosphate, as it yields comparatively more soluble product. Little change has taken place in the quantities of phosphate imported from other countries, and the use of Belgian keeps pace with river phosphate. River phosphate at 7d. to 7½ d. per unit seems to have reached the lowest limit, and at the present moment it is only the question with miners who will hold out the longest. It seems certain that they cannot go on raising phosphate at these ruinous prices, and even now, if freights get a little firmer, higher prices will have to be paid. The same remarks apply to the Florida phosphate mines, and perhaps with more force, because miners in Florida have not tasted the former prosperous years like the South Carolina mines." A comparative statement of the imports of Florida phosphates into the United Kingdom during the first six months this year and the years 1890 and 1891 is as follows: Six months of 1892, 38,617 tons; six months of 1891, about 8,000 tons, and twelve months of 1891, 35,203 tons. The imports of South Carolina river rock was rather less than in 1891, viz., 50,189 tons as against 55,315 tons, while the shipments of Florida river (Peace river) have much increased, from 4,000 tons in six months (January-June) of 1891 to 16,000 for the same period of 1892.

Phosphate and Fertilizer Notes.

AT Mobile, Ala., the fertilizer market is quiet and values steady as follows: Pure ground bone \$33.00 to \$35.00, acid phosphate \$16.00 to \$17.00, kainit \$15.00 to \$15.50, magnet soluble guano \$22.50 to \$25.00, Mobile standard \$23.00 to \$25.00, I X L acid phosphate \$15.00 to \$16.00, eclipse soluble guano \$20.00 to \$21.00. Pacific guano in car lots \$25.00, and perfection guano \$21.50 to \$23.50. The foregoing prices are for tons of \$2,000 pounds.

THE following shipments of phosphate rock for the week ending September 5th are reported by Collector Conally, of the port of Punta Gorda, Fla.: Steamship Dunsley, for Plymouth, England, cleared with 2,806 tons pebble rock shipped by the Charlotte Harbor Phosphate Co., and the British steamship Huntingdon, for Stettin, Germany, with 1,500 tons pebble rock shipped by the Peace River Phosphate Co.

LATE advices from Bowling Green, Fla., report the phosphate industry as encouraging, and many improvements are in progress. At the National Peace River Works everything is looking like business, and the company, it is said, has contracted 7,000 tons of phosphate to a Liverpool company at \$6.10 f. o. b., of which 2,500 tons goes to Germany. At the Massachusetts works everything is active, and the plant is now about complete, being one of the finest in the State.

LUMBER MARKETS.

New York.

OFFICE OF MANUFACTURERS' RECORD
No. 126 Liberty Street,
NEW YORK, September 14.

Not within the recollection of the writer have we ever had a more beautiful fall, or one in which work could be better prosecuted. But the indications are now that this will not revive the trade which we seem to wait for in vain.

There is an impression abroad that this is going to be a cold winter, and this will undoubtedly delay many enterprises which would otherwise go on, because there are always a lot of timid people who want everything their own way, or they don't spend their money. For two or three years past we have had winters in which work could be carried on almost every day. The jobbing trade, however, in this section is fairly active, and dealers report business pretty good in this direction.

All of the leading white pine markets have advanced their prices from \$1 to \$3 all along the line, and we should not be surprised to see them go up still higher, because white pine is very scarce. Certainly the poplar men will not regret this condition. Poplar is almost as scarce in some sections as white pine. In fact, some of the largest mills we know of in the South have only enough stock to supply their own customers, and are not seeking to find new ones; so it will be seen there is every reason why poplar should go up in price, and not one to show that it should decline. It will go up in a minute if you give it a little boosting, and the greatest danger it has to contend with is from its friends. Some people, if they haven't got but a carload of stock, will go around cutting prices to sell that, and they can do more harm in a minute than a conservative wholesaler could do in ten years. With a short supply in all sections, isn't it wonderful that it doesn't advance in price? Firsts and seconds sell at \$30, saps at \$25, common about \$22 or \$23, six days in a week, and no one seems to think of changing the price-list. The white pine people have been sagacious enough to put their prices up. Why don't the poplar men do the same? That is what we would like to know.

Yellow pine hangs around at the old figures. The demand keeps about the same. Big sizes and little sizes are all put in the same pot. Nobody seems to care, and all the time the yellow pine manufacturers are getting nearer to the end of their route. Quotations are about as follows:

Building orders, 12 in. and under.....	\$19.50@20.00
" 14 in. and up.....	20.00@21.00
Yard orders, random.....	17.00@18.00
Ship stock, 4 ft. average.....	22.00@23.00
Heart face siding, 1 and 1½ in.	18.00@19.00
1-inch wide boards.....	22.00@24.00
½ and ¼-inch wide boards.....	23.00@24.00
Kiln-dried sap swing.....	15.00@16.00
Rift-sawn flooring, rough cargo lot.....	26.00@28.00
" tongue and grooved, in carload lots.....	40.00@42.00

There is an improvement in North Carolina pine, in which some of our wholesale houses have been doing a very large business since our last letter. We think there will be no decline in prices or in demand.

The demand for cherry is good, and prices remain stiff. The fact of the matter is that the available supply of cherry is held in very few hands, and they are going to get their prices or they are not going to sell their stock. The cherry men don't seem to be rushing around trying to see who can sell the best cherry for the lowest figure, and I don't think you will see them rushing around this year. They know when they have got a good thing, and that is more than can be said of most lumbermen.

Quartered oak is yet the favorite and still in the lead. Our quotations are as correct as they can be made.

1½ inch and up.....	\$49.00@50.00
Thicker.....	50.00@53.00
Common.....	35.00@38.00

There is very little call for common and

none to speak of for culs. Plain oak is also slow of sale.

The supply of plain oak is fully up to the demand and prices remain as follows:

185 inch and up.....	\$35 00@ \$36 00
1/2 and 1/2 inch and up.....	36 00@ 38 00
2 inch.....	37 00@ 39 00
Export oak.....	32 00@ 34 00

We would at no time advise the shipment of culs, as shippers would have to take anything they could get.

Good ash holds its own in prices, and the demand is able to take care of all that is coming along.

1 inch.....	\$35 00@ \$37 00
1/2, 3/4 and 1 inch.....	37 00@ 40 00
2 1/2, 3 and 4 inch.....	38 00@ 41 00
Common.....	22 00@ 24 00
Balusters.....	22 00@ 26 00

We have a general impression that the lumber trade will have some loafing time this winter. They won't have to hustle. Business will be about fair to middling, and they will have plenty of time to devote to their organizations where they have them and to getting up new ones where they have them not, and if they do this they will make more money in the end than if their business was so good as to prevent them giving their associations the time which by right they should have.

Baltimore.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, September 15, 1892.

The local market is in about the same condition as last reported, and the movement during the week has been fairly active, with prices not materially changed. Receipts of Virginia and North Carolina yellow pine continue liberal, with values easy but not notably lower. R. T. Waters & Son, in their circular of the 9th instant, say: "There have been during the past month some rather extraordinary features in our Virginia and North Carolina pine lumber market. Boards have continued to arrive in quantities sufficiently in excess of the demand (which has been unusually large) not only to keep prices from advancing, but, in fact, to lower them, while joist and scantling of the sizes suggested in our last circular letter shipped directly from the saw have been received and sold at from \$2.00 to \$3.00 per thousand feet more than dry 4-4 box of ordinary widths, and such is the condition of the market to-day." Air-dried flooring is in liberal supply and some of the receipts in poor condition, but good marketable stock commands fair figures. Box boards are in good supply and prices very low. The market is quite bare of joists, scantling and plank, and for certain sizes there is an active demand. Heart lumber is dull, with a good supply. Cypress is in good request for the best grades, with prices steady. In hardwoods there is no change, and the demand is steady and regular. Shingles are very firm, with the supply of good grades rather light and prices very firm. Laths are nominally steady, with no urgent demand.

VIRGINIA AND NORTH CAROLINA PINE.

5-4X10 and 12 No. 2, kiln dried.....	\$16 50@ \$16 75
4-4X10 and 12 No. 1, " "	19 50@ 20 00
4-4 narrow edge, No. 1, kiln dried.....	16 75@ 17 25
4-4 wide " " "	18 00@ 19 00
6-4X5-10 and 12, No. 1, kiln dried.....	22 00@ 22 50
4-4 No. 1 edge flooring air dried.....	15 00@ 16 00
4-4 No. 2 edge flooring.....	12 50@ 13 00
4-4 No. 1 1/2-inch stock.....	16 50@ 17 00
4-4 No. 2 1/2-inch stock.....	13 50@ 14 00
4-4 edge box or rough wide.....	9 75@ 10 25
4-4 edge box or rough (narrow) widths.....	8 00@ 9 00
4-4 edge box or rough (narrow).....	8 25@ 9 75
4-4X12 edge box or rough.....	10 00@ 10 50
3/4 narrow edge.....	7 00@ 8 00
3/4 all widths.....	8 00@ 9 00
3/4 10X16 wide.....	9 00@ 10 00
Small joists, 2 1/2-12, 14 and 16 long.....	8 00@ 8 50
Large joists, 3-16 long and up.....	10 00@ 11 00
Scantlings, 2 1/2-16.....	9 00@ 9 50
" 2 1/4-16, 18 and 20.....	9 00@ 9 50
" 3 1/4-16, 18 and 20.....	9 00@ 9 50
" 6-4X12-16.....	10 00@ 10 50
" 8-4X12-16.....	10 00@ 10 50
" 6-4X10-16.....	9 00@ 9 50
" 8-4X10-16.....	9 00@ 9 50

SOUTHERN PINE.

Siding and edge boards.....	\$14 00@ \$14 75
Heart face boards.....	22 00@ 23 00
WHITE PINE.	
1st and 2d clear, 4-4.....	\$48 00@ \$51 00
" 5-4, 6-4 and 8-4.....	48 50@ 51 50
Good edge culs.....	43 00@ 44 00
Good stock.....	14 50@ 15 50
White pine, No. 1, 4-foot headed pickets.....	13 50@ 14 50
4-4 selected edge.....	39 00@ 43 50
6X8-4 selected edge, box out.....	39 00@ 45 00

CYPRESS.

4-4X6, 16 feet, clear.....	\$22 00@ \$23 00
4-4X6, 16 feet, fencing.....	12 00@ 13 00
4-4 rough edge.....	9 00@ 9 50
4-4 edge, Nos. 1 and 2.....	18 00@ 21 00

HARDWOODS.

Walnut.....	\$75 00@ \$100 00
4-4, Nos. 1 and 2.....	90 00@ 100 00
" 6-4 and 8-4.....	95 00@ 110 00
Nos. 2 1/2, 3 and 4.....	125 00@ -----
Newell stuff, clear of heart.....	125 00@ -----
Culls.....	30 00@ 35 00

OAK.

Cabinet, white and red, plain sawed and good 1 and 2, 8 in. and up, 12 to 16 feet long, 4-4.....	\$35 00@ \$40 00
5-4 to 8-4.....	35 00@ 40 00
Quartered white, 1 and a quality, all figured, 6 in. and up wide, 4-4.....	50 00@ 52 50
Culls.....	10 00@ 15 00

POPLAR.

Nos. 1 and 2, 3/4.....	\$21 00@ \$23 00
" " " 4-4.....	24 00@ 26 00
Nos. 3, 6 and 8-4.....	27 00@ 30 00
In yellow pine cargoes, log run stock.....	12 00@ 16 00
Culls.....	12 00@ 14 00

LATHS.

SHINGLES.	
Cypress, No. 1 hearts, sawed, 6X20.....	\$7 7 @ \$8 00
No. 1 saps, sawed, 6X20.....	6 00@ 6 50
No. 1 hearts, shaved, 6X20.....	6 50@ 7 00
No. 1 saps, shaved, 6X20.....	5 25@ 5 50

Norfolk.

[From our own Correspondent.]

NORFOLK, VA., September 13.

Widespread reports extending through all the leading lumber journals of the day are united upon the question of activity prevailing at present in the Norfolk timber and lumber industry. Each week we chronicle additional features of progress, and the one just ended has been no exception. A regular and constant demand has been the rule during the week, and in all lumber circles, both local and surrounding sections, the same progress is everywhere present. In Virginia and North Carolina yellow pine prospects were never better, and it will be singular if there is not a general advance in values throughout the list. There is a good demand for dressed lumber, with a better feeling generally, numerous orders being reported and better prices realized. Air-dried lumber is also in better demand, and, with liberal receipts, arrivals are being rapidly consumed, with prices firmer. Values are firmer for cypress lumber and stocks much depleted, while receipts are light. Cypress shingles are in good demand at full values, and stocks are not sufficient to supply immediate wants. The following table represents the prices current at this date:

Kiln-dried North Carolina pine lumber f. o. b. at this port is quoted as follows:

5-4 rift No. 1.....	\$27 50@ -----
5-4 rift No. 2.....	16 00@ -----
5-4X10 No. 1.....	19 00@ -----
5-4X12 No. 1.....	19 50@ -----
5-4X10 No. 2.....	15 00@ -----
5-4X12 No. 2.....	15 00@ -----
5-4 edge No. 1.....	17 00@ -----
5-4 edge No. 2.....	13 50@ -----
4-4 rift No. 1.....	23 00@ -----
4-4 rift No. 2.....	15 00@ -----
4-4X10 No. 1.....	18 00@ -----
4-4X12 No. 1.....	18 50@ -----
4-4X10 No. 2.....	14 00@ -----
4-4X12 No. 2.....	15 00@ -----
4-4 edge No. 3.....	9 50@ -----
5-4 edge No. 3.....	10 50@ -----
4-4X8, 10 and 12 culs or box.....	8 50@ 10 00
4-4X5-4 edge, culs or box.....	8 00@ 8 50

VIRGINIA PINE.

4-4 flooring boards (dry and clear).....	\$13 50@ \$14 50
4-4 flooring boards (rough).....	7 75@ 8 25

SHINGLES.

No. 1 hearts, split, car lots.....	\$ 6 75@ 7 25
No. 2 hearts, split, car lots.....	7 50@ 8 25
No. 1 saps, split, car lots.....	4 75@ 5 50
No. 2 saps, split, car lots.....	4 25@ 5 00
No. 1 sawed hearts, car lots.....	6 50@ 7 00
No. 2 sawed hearts, car lots.....	5 00@ 5 50

WOOD.

Hard, per cord.....	\$ 2 75@ 3 00
Pine, per cord.....	2 75@ 3 00

STAVES.

Red oak hogshead, prime.....	\$36 00@ \$38 00
Red oak hogshead, culs.....	22 00@ -----
White oak hogshead, prime.....	50 00@ 53 00
White oak hogshead, culs.....	30 00@ -----
White oak heading, prime.....	50 00@ 53 00
White oak heading, culs.....	26 00@ -----

Charleston.

[From our own Correspondent.]

CHARLESTON, S. C., September 13.

The lumber and timber market has shown somewhat more activity during the week, and the general features are more encouraging. The beginning of the commercial year is not generally characterized by a large volume of trade, and for the most part operators are preparing for the new season. Improvements are reported from several milling sections, and most of the mills are all fully employed. The entire output for the season of the Gardner

& Lacy Lumber Co.'s mills, of Georgetown, S. C., has been contracted for by New York parties. A more active season is expected, and prices are generally very steady, with a good demand from Northern ports. The quotations remain unchanged, and for merchantable lumber \$14.00 to \$16.00 is the figure for city sawed, and \$12.00 to \$14.00 for railroad; square and round timber, \$9.00 to \$13.00 for railroad and \$8.00 to \$11.00 for raft; dock timber, \$4.50 to \$6.50, and shipping, \$8.50 to \$10.50. Shingles are steady at \$5.00 to \$7.00 per thousand. Lumber freights are not active and rates about steady. On crossties, basis 44 1/2, 15 cents each is the figure. On resawed lumber to Philadelphia, \$4.62 1/2, and to New York \$4.75. The comparative exports of lumber and timber are given in the following table:

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1891, TO SEPTEMBER 9, 1892.

Exported to	1891-'92, Feet.	1890-'91, Feet.
New York.....	317,000	615,164
Boston.....	334,000	633,000
Philadelphia.....	313,000	365,000
Baltimore.....	365,000	365,000
Other United States ports.....	651,000	1,613,164
Total coastwise.....	651,000	1,613,164
Great Britain.....	-----	-----
Palermo.....	250,759	-----
France.....	-----	-----
West Indies.....	-----	-----
South America.....	-----	-----
Nova Scotia.....	-----	-----
Other foreign ports.....	-----	-----
Total foreign.....	250,759	-----
Grand total.....	930,759	1,613,164

Savannah.

[From our own Correspondent.]

SAVANNAH, GA., September 13.

The state of trade in lumber circles continues to show decided improvement, and the volume of business of the port bids fair to show a remarkable increase during the current commercial year. There is a fair demand, both domestic and foreign, and shipments for the week aggregate 9,373,900 feet of lumber and two cars shingles. Operators are looking forward to the commencement of harbor improvements, which are likely to begin in October next. The completion of this will greatly facilitate shipments, and it is expected that Savannah will have twenty-six feet of water to the sea, which, with a light expenditure, will maintain the harbor in that capacity of channel. Advices from the interior are very encouraging, and at all milling points a steady business is the rule. As to values, there has been no material change during the week, and prices for easy sizes are quoted at \$11.50 to \$13.00, ordinary \$12.00 to \$16.00, difficult \$14.00 to \$25.00, flooring boards \$14.50 to \$22.00, and shipstuffs \$15.50 to \$25.00. Lumber freights show no change, and the offering of sail tonnage is liberal and market dull, most of the arrivals during the week being already chartered. The rates from this and nearby Georgia ports are quoted at \$4.25 to \$5.00 for a range including Baltimore and Portland, Me. Steamers are still quoted at \$7.00 to New York, \$8.00 to Philadelphia and Boston, and \$6.50 to Baltimore.

Mobile.

[From our own Correspondent.]

MOBILE, ALA., September 12.

In last week's letter the statistics of the lumber and timber trade were given for the past year ending August 31, 1892. The showing made by the port of Mobile for the year presents some interesting facts and shows clearly that she has attained a high position among South Atlantic ports as a convenient point of shipment. The following table shows the distribution of product, and at the same time presents a remarkable increase in quantity, as well as a gain in patronage and business with new sections of country. The exports to Great Britain and France were three times as great as the previous year, and to Ger-

many, Holland and Mexico twice the quantity was shipped. Among the new customers may be named the coastwise ports of Fall River, Lynn, Baltimore, Velasco, Texas, and Portland. The increase to Providence has been 4,500,000 feet, to Philadelphia 1,344,527 feet, while there was a decrease of about 1,000,000 each to Boston and New York:

FOREIGN.	Feet.
Great Britain.....	8,035,348
Ireland.....	123,080
France.....	1,299,750
Germany.....	1,362,658
Holland.....	2,362,565
Spain.....	272,445
Rio Janeiro.....	406,530
Mexico.....	6,981,520
Aspinwall.....	460,810
Cuba.....	11,745,412
Jamaica.....	724,799
Trinidad.....	221,176
Africa.....	187,330
Various.....	3,777,789
Total feet.....	37,991,192
Value.....	\$619,134,84

COASTWISE.

Feet.

COASTWISE.	Feet.
New York.....	11,256,830
Philadelphia.....	1,244,527
Boston.....	3,213,064
Providence.....	4,659,550
Fall River.....	182,167

have been Mr. Niemeyer, of the Niemeyer & Darragh Shingle Co., of Little Rock, Ark. This concern turns out 30,000,000 cypress shingles a year, shipping them mostly to Illinois. They are preparing to double their capacity.

H. J. Lutcher, of Lutcher & Moore, the heaviest lumber firm in the South, passed through here on his return from a Northern and Eastern trip. Their mill at Lutcher, La., turns out each day in the year 250,000 feet of cypress lumber and 150,000 shingles, and the one at Orange, Texas, 350,000 feet each day of long-leaf pine. They have \$1,300,000 invested in their plant, and own sufficient timber lands to last for this generation. In 1891 they shipped over 13,000 cars of lumber, and paid for freights \$1,360,000. Their cypress lumber goes mostly to New England and the Atlantic coast States, where people have learned by long experience the value of cypress as a staying lumber. They recently cut a cypress tree that was eight feet four inches in diameter and had over 2,300 rings of annual growth, showing that it was over 400 years old at the commencement of the Christian era.

The country stave mills are mostly running fully up to limit of capacity, but prices are too low for much profit. The Kansas City & Southern Lumber Co., at Sedgwick, Ark., are largely adding to the machinery of their plant. They cut hard-wood exclusively.

The belting and mill supply men all report a good trade and fine promise for the fall business. The associate trades, boxes, cooperage, woodworking concerns generally, each report a fine business, working fully up to capacity and with remunerative prices.

There are as yet no changes in the prices in this market.

Current prices are as follows:

BLACK WALNUT.	
1st and 2d, 1, 1½ and 2 inch.....	\$65 00@ 70 00
Common.....	35 50@ 40 00
Counter tops.....	90 00@ 110 00
ASH.	
1st and 2d clear, 1 to 4 inch.....	24 00@ 30 00
Common.....	12 00@ 14 00
CYPRESS.	
1-inch, 1st and 2d clear.....	22 00@ 24 00
1½ 1¾ and 2 inch.....	24 00@ 26 00
Fencing 1x6, 16 feet.....	15 00@ 16 00
POPLAR.	
1-inch, 1st and 2d clear.....	24 00@ 25 00
1½ 1¾ and 2 inch, 1st and 2d clear.....	26 00@ 28 00
Common boards.....	14 00@ 16 00
Dressed, 1, 1½ & 2-in., 1st & 2d clear.....	28 00@ 30 00
Common dressed, 1-inch.....	16 00@ 17 50
Squares.....	22 50@ 26 00
COTTONWOOD.	
1 to 3-inch mill run, culs out.....	9 00@ 12 00
Squares.....	12 50@ 16 00
RED GUM.	
1st and 2d.....	16 00@ 20 00
Common and culs.....	8 00@ 10 00
OAK.	
1 to 4-inch, 1st and 2d.....	24 00@ 26 00
Common, 1 and 2 inch.....	13 00@ 15 00
Quarter oak, 1 inch, 1st and 2d.....	30 00@ 32 00
Quarter oak, 1¼-inch and up.....	34 00@ 36 00
White \$1 higher.	
YELLOW PINE.	
1st and 2d, 1½ and 2 inch.....	18 00@ 20 00
Dressed.....	25 00@ 30 00
Flooring, 5 and 6 d and m.....	17 50@ 20 00
Flooring, 3 and 4 d and m.....	17 5 00@ 20 00
2d flooring.....	15 00@ 17 50
Heart step lumber.....	27 50@ 30 00
Ceiling, 1st and 2d, ¾, ¾ and ¾.....	17 5 00@ 20 00
Ceiling, 1st and 2d, ¾ and ¾.....	16 0 00
Common l. o. b. Memphis.	
Car lots.....	12 50@
TIMBER (LOGS).	
Poplar.....	6 00@ 10 00
Cypress.....	6 00@ 9 00
Cottonwood.....	3 00@ 4 00
Gum.....	3 00@ 4 50
Oak.....	6 00@ 12 50
Ash.....	8 00@ 13 00
Black walnut.....	15 00@ 50 00
SHINGLES.	
No. 1 heart cypress, 16 in ch.....	3 00@
No. 1 sap, 16 inch.....	2 25@
LATH.	
Poplar.....	2 00@ 2 75
Cypress.....	2 00@
Pine.....	2 00@

Beaumont, Texas.

BEAUMONT, TEXAS, September 12.

In all the lumber circles throughout the manufacturing sections of Texas and Louisiana the latest advices continue of an encouraging character. The demand throughout the State has improved, and from Kansas, Nebraska and Colorado there is an active demand. In local circles the mills are all fully employed, and a large trade is being cultivated with Mexico, the Texas Tram & Lumber Co. and others having a large business with that republic. The Long Manufacturing Co. is having an

excellent trade in shingles, the mill being far behind in orders. The *Journal*, in its weekly review, says of the market: "All the mills are supplied with good saw bills. Prices come up rather slowly. During the past sixty days of brisk demand the advance has not averaged fifty cents per thousand, but it is safe to assume that the continuance for thirty days of present conditions will result in sending up the figures on all grades and classes of material. Owing to several large mills being idle on account of a scarcity of timber, the demand for shingles may be described as ravenous. There is no dry stock in the district, shingles going direct from the packer's hands to the cars." The shipments from mills during August were unusually large, nearly every manufacturer having reduced his stock. The Beaumont Lumber Co. shipped 4,600,000 feet for the month, being 500,000 feet more than its two mills cut. At Westlake and Lake Charles, in Louisiana, the mills have been running in good shape, and many improvements are contemplated in the various plants. There is a good business doing in cypress in this section, and all the shingle mills are working up to their full capacity, and even then are not able to fill the numerous orders. As the State railway commission has gone under, the people of this section hope to obtain better results in marketing lumber, and this, with a reduction of rates, will give a firmer tone to values.

British Timber Trade.

The London *Timber Trades Journal* of the 3d inst., in its review of the market, says: "The last week has not been noticeable for any change; f. o. b. business drags along slowly without any alteration in prices. Several c. i. f. contracts have been made in Norwegian flooring to the west coast, but these have been only of an incidental character and for small-sized vessels. Stocks are plentiful everywhere, and all indications point to a very moderate fall trade. * * * There is only one pitch pine cargo in the list this week, viz., the Campbell sailer from Mobile, but as she brings a good line of deals, besides boards and scantlings, her contribution will not 'bear' prices, the timber portion amounting to 2,144 pieces. Since the report in our last issue as to the corner in pitch pine, we hear that several steamer cargoes are expected very shortly which may possibly delay the anticipated improvement in the prices of sawn timber." In reference to auction sales of pitch pine the *Journal* says: "The catalogues have been bare of good class Pensacola deals. The few odd parcels of inferior stuff that have recently come under the hammer afford very little guide in the prices they fetch as to the value of really prime planks.

COTTON MARKET.

NEW ORLEANS, LA., September 12.
Editor Manufacturers' Record:

The course of to-day's market is an illustration of how frequently the course of it is contrary to general expectations, as there was every indication after Saturday's closing and the publication of the bureau report on the same day, of a decidedly better opening in Liverpool to-day and a corresponding improvement here. The course of that market in the face of a loss in condition of six points as compared with the September report of last year is explainable only by reason of the very unfavorable trade outlook and the general depression in coal and iron and the tinplate industry of Great Britain, which the Associated Press dispatches of yesterday show to be in a very demoralized condition. When we consider that it is the English and Continental spinner who takes the largest percentage of the American crop, and that Liverpool alone has 1,100,000

bales of American on hand and afloat, we must wait on this side until they are ready to buy the new receipts, the character of which, so far as style of cotton is concerned, is as yet an unknown quantity, as not enough of it has come into the market to be able to determine how it compares with last year's crop. We are already in New Orleans and New York above a parity with the Liverpool market, and as cotton cannot be moved from the interior and the ports to European markets profitably at present, it stands to reason that we shall have to wait until the seller can get a demand that will enable him to market the coming crop. The demand does not yet exist, and apparently it will require something more than crop reports to create that active enquiry which will absorb cotton as it comes to market and prevent accumulating stocks. Once we begin to show that our accumulations of stock are growing at a rate far out of proportion to a demand for it, we will see the spinner acting very independently, with a strong pressure by the spot holders to sell, and perhaps at the spot holders to sell, and perhaps at very low prices during the next sixty or ninety days. To offset all this our reports since the first of the month are, if anything, more unfavorable than what we were receiving previously, and our attention is particularly called to the rank growth and poor fruitage, and this applies generally with the exception of Texas. Those bearingly inclined, however, say at this season last year crop accounts were equally as unfavorable, if not more so. The lateness of this crop makes it particularly susceptible, of course, to the danger of an early frost, and in that event, with an unfavorable picking season, the promise of a "bull" market would seem decidedly in order. For the moment, however, we have to deal with the present. The excess over last year is being rapidly reduced, but we cannot overlook the fact that we are very slightly reducing the world's visible supply of American which was brought into this crop the 1st of September, about 2,150,000 bales, and on last Saturday was 2,129,000 bales, or about 24 per cent. of last year's crop of 9,000,000. The South is in no condition to be forced to sell its cotton product at current prices, to say nothing of lower figures, but it is our opinion that it will require most unfavorable crop conditions to bring about any material reaction from current prices.

ATWOOD VIOLETT & CO.

CLOSING PRICES OF FUTURES SEPTEMBER 14.

Months.	New Orleans.	New York.	Liverpool.
September.....	6.63@	6.92@	3 60-64
October.....	6.71@	7.02@	3 61-64
November.....	6.79@	7.13@	3 62-64
December.....	6.88@	7.25@	3 63-64
January.....	6.97@	7.3 6@	4 1 64
February.....	7.07@	7.46@	4 3-64
March.....	7.16@	7.56@	4 5-64
April.....	7.26@	7.66@	4 8 64
May.....	7.35@	7.76@	4 11-64@
June.....	@	@	@
July.....	@	@	@
August.....	@	@	@
Total of the market.....	Steady and quiet	Easy.	Steady.

CLOSING PRICES OF SPOT COTTON SEPTEMBER 14.

Grade.	New Orleans.	New York.	Liverpool.
Middling.....	6 15-16	7 3-16	4
Low middling.....	6 ½	6 ½	3 15-16
Good ordinary.....	6	6 1-16	3 ½
Total of the market.....	Quiet.	Fairly active.	Steady, Fair demand.

Southern Iron Notes.

THE Salem (Va.) Furnace Co. will likely blow out its plant for repairs in a few weeks.

THE Cranberry Iron & Coal Co. has blown out its furnace for repairs.

THE Longdale (Va.) Iron Co. has blown out one of its stacks for repairs.

MR. J. D. KASE, secretary and treasurer of the North Carolina Steel & Iron Co., of

Greensboro, informs us that the concern's furnace will not go into blast until there is a better outlook in the iron market.

THE Radford Pipe & Foundry Co. is building new cranes and improving its plant at Anniston, Ala.

THE Jenifer (Ala.) Iron Co. expects to put its furnace in blast about the 1st of October.

THE Blue Creek iron mines near Bessemer, Ala., will increase their output now that the Oxmoor furnaces will go into blast.

THE De Bardeleben Coal & Iron Co., of Bessemer, Ala., is about to put in blast its Little Belle furnace at Oxmoor.

THE Gadsden (Ala.) Iron Co. has blown out its furnace and will not resume until the iron market improves sufficiently to warrant it.

THE French company's phosphate mine near Anthony, Fla., will soon be in active operation, and will be perhaps the largest plant in the State. The phosphate is conveyed to the washer by means of cars drawn up an inclined track by a small engine. There are two cars capable of holding about one ton of phosphate each, and while one car is being automatically unloaded the other is being loaded by men in the mines.

TRADE LITERATURE.

THE Lovell Manufacturing Co., Limited, of Erie, Pa., has issued a price-list and catalogue describing the well-known "Niagara Constant Potential" dynamo and motor which they manufacture. The catalogue is largely devoted to an excellent description of the service of motors and generators and a history of the earliest ones made, besides giving a great deal of interesting and useful information for the electrical engineer.

THE Belmont Iron Works, Limited, has issued a catalogue of standard bridge railings showing a great variety of neat and effective designs and of varying prices. Some of these designs are plain and substantial and others highly artistic and ornamental, giving the architect a wide range to choose from. To anyone contemplating the purchase of iron railings for any purpose, it will be well to examine this catalogue before placing an order.

GENERAL catalogue No. 12 of the Champion Iron Co., Kenton, Ohio, contains 219 pages of matter illustrating and describing the wide variety of architectural iron work for fences, bank railings, offices and jails which they manufacture. Among the many patterns shown the architect is sure to find at least one suited to his purpose. A particularly neat iron spiral stairway is shown on page 123. The jail work department shows the five-ply hardened steel bars and plates and the independent locking and sanitary devices for which this company is well known. Counties intending to erect neat, secure and sanitary jails will find this department of the catalogue of particular interest.

ONE of the most complete catalogues of woodworking machinery ever received at the *Lumberman* office is that recently issued by the Egan Co., of Cincinnati, Ohio. The book contains nearly 300 pages filled with engravings and descriptive matter of the very extensive line of machinery manufactured by this company, and is prefaced by a telegraph code arranged for the use of correspondents. It is printed on the best calendered paper, and bears evidence of having received the same careful attention in its arrangement and publication that the company gives to the construction of its machinery. Every woodworker in the country should have a copy.—*Northwestern Lumberman*.

THE Gas Engine & Power Co., of Morris Heights, New York city, has issued a neat, descriptive catalogue and price list of the large line of naptha launches which they manufacture. The catalogue is well illustrated from photographs, showing many styles and kinds, enough to make the lover of water determine to secure one of these beautiful little crafts for his pleasure and comfort. No one, except those who have tried such a launch, realizes the absolute delight, the freedom from noise or smoke or the speed which can be obtained from them. Their other important feature, safety, is a great point in their favor, and also the fact that the owner does not have to pay for a licensed pilot and engineer. The naptha launch is inexpensive, cheaply operated, speedy, comfortable and safe—*medium in price*—and the catalogue sent out by the company is well designed to convince anyone of these facts.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Birmingham—Saw Mill.—Dean & King will put several new machines in their Bibb county saw mill.

Florence—Iron Works.—The Florence Iron Works has been incorporated to succeed the Florence Stove Foundry. New capital and new machinery will be added to the plant.

Gadsden—Cottonseed-oil Mill.—George W. Wharton has purchased the Etowah Alliance Manufacturing Co.'s cottonseed oil mill.

ARKANSAS.

Alexander—Planing Mill.—Esten Peloubet and W. H. Slack have built a planing mill.

Donaldson—Lumber Mill.—F. W. Gray will start a new mill and operate as the Donaldson Lumber Co.

Hot Springs—Lime Works.—James E. Hart is endeavoring to organize a company for the purpose of establishing lime works.

Selby—Lumber Mill.—The Kansas City & Southern Lumber Co. is adding machinery to its mill.

FLORIDA.

Arcadia—Irrigating Plant.—Louis Parker will construct an irrigating plant.

Fernandina—Shingle Mill.—J. N. Jones and J. E. Johnson have erected a shingle mill.

Jacksonville—Saw Mill.—L. Bucki, of Ellaville, will erect an extensive saw mill at Jacksonville. Will operate as the L. Bucki Lumber Co.

Leesburg—Veneer Mill.—E. Johnson is negotiating for the establishment of a veneer mill.*

GEORGIA.

Griffin—Water Works.—The city will purchase and operate the Griffin Water Works Co.'s plant. The decision was made at an election held last week, and bonds are to be issued to provide the necessary funds. The mayor can give information.

Kensington—Machinery Works.—Messrs. Lilley & Hillsley will at once rebuild their machinery works, reported in this issue as burned.

Savannah—Electric power Plant.—The Savannah Electric Railway Co. will add considerable machinery to its electric power plant.

Savannah—Tannery.—A movement for the erection of a tannery is afoot in Savannah. C. B. Warrand can possibly give information.

Thomaston—Cotton Gin.—The A. W. White Shoe & Leather Co. has erected a cotton ginnery.

KENTUCKY.

Bloomfield—Creamery.—M. R. Netherton has organized a company for the purpose of establishing a creamery.

Cynthiana—Water Works.—A system of water works will be built. The mayor can give information.*

Lyons Station—Saw Mill.—W. B. Miller is rebuilding his saw mill which was recently burned.

LOUISIANA.

Lake Arthur—Saw and Planing Mill, etc.—S. P. Moore, of Mammoth Prairie, and J. E. Hattan and F. P. Martin, of Belle Plaine, Ill., have purchased F. B. Cutting's rice plantation, saw mill, etc. The purchasers intend to add a planing machine to the saw mill and continue its operation.

Lake Charles—Rice Mill.—Messrs. Jahn & Co., of New York city, have arranged for the erection of a rice mill at Lake Charles, La. A \$20,000

stock company will be organized to operate it. Site for the plant has been purchased; also the outfit of machinery, and work on its erection will commence at once. Mr. Vardell will be superintendent of the mill.

Monroe—Electric light Plant and Water Works. Work on the Monroe Water Works & Light Co.'s plant will commence immediately. Messrs. Bright & Gravely are now in Chicago negotiating for the outfit of machinery.

New Orleans—Mercantile Company.—The Henry Hyams Co., Limited, has obtained charter; officers, Henry Hyams, president and general manager; B. Frank Mebane, vice president, and Samuel E. Sutter, secretary and treasurer; capital stock \$20,000.

New Orleans—Merchandise Company.—Messrs. Lehman, Stern & Co., Limited, have obtained charter of incorporation; capital stock \$300,000. Maurice Stern is president, and George Seeman, vice-president and treasurer.

New Orleans—Planing Mill.—W. J. Athens & Co. have petitioned the city council for authority to erect a planing mill.

MARYLAND.

Baltimore—Cotton Mill.—The Mount Vernon Co. will put in additional machinery.

Centreville—Brass Works.—Negotiations are pending between the business men of Centreville and the Franklin Brass Manufacturing Co., of Buchanan, Va., for the rebuilding of the latter concern's plant in Centreville.

Elkton—Electric-light Plant.—The Elkton Electric Light & Power Co. has let contract to the Pennsylvania General Electric Co., of Philadelphia, at its bid of \$11,818.75, for the erection of its electric-light plant. Work on it will commence immediately, and it is expected to be completed by December.

Melvale—Electric-light Plant.—The Mount Washington Electric Light Co., recently reported (under Mount Washington) as incorporated, has obtained site at Melvale and is now building an electric-light plant there. The company may extend its line to Towson.

Middletown—Water Works.—A system of water works will be put in for supplying Middletown. H. K. Haupt, clerk to burgess and commissioners, can give information.

Oella—Paper Mill.—Work on the erection of a paper mill at Oella has commenced. The mill is to be operated by the Mentzel Paper Co., of Howard county, organized by Harry D., William M. and Albert W. Mentzel, of Baltimore, and John G. Rogers and William L. Nott, of Howard county. The capital stock is placed at \$25,000.

Washington, D. C.—The Washington Postage Stamp Delivery Co. has been incorporated under West Virginia laws for the purpose of advertising by means of sale of postage stamps through coin-operated boxes; capital stock \$10,600.

MISSISSIPPI.

Greenwood—Electric-light Plant and Water Works.—W. R. Yeargin, of Dyersburg, Tenn., will likely erect an electric-light plant and construct a system of water works in Greenwood, as the city officials have promised to subscribe for water and lights if he will do so.

Greenwood—Iron Foundry and Machine Shop. W. R. Yeargin, of Dyersburg, Tenn., will erect an iron foundry and machine shop in Greenwood. Site has been purchased, and the plant will be built immediately.

NORTH CAROLINA.

Charlotte—Cotton Mill.—The Victor Cotton Mills have recently put in twenty twisters.

Dallas—Cotton Mill.—The Dallas Cotton Mill Co. will double its plant's capacity.

Forrest City—Cotton Mill.—The Florence Mills may put in new machinery.*

Graham—Flour Mill—White, Williamson & Co. are putting in a new roller flour mill with a daily capacity of thirty barrels. The Edward Corbett Co., of Salem, Va., has contract to furnish the outfit.

Mount Airy—Granite Quarries.—The Mount Airy Granite Co. is preparing to add considerable machinery to its quarries.

SOUTH CAROLINA.

Anderson—Fence Company.—W. E. Watson, B. F. Mauldin, J. L. Tribble and R. S. Ligon have incorporated the Anderson Fence Co. with a capital stock of \$20,000.

Charleston—Bakery, etc.—H. C. Margenau will build a four-story factory and bakery 60x140 feet. D. G. Ziegler has prepared the plans.

Charleston—Photo Engraving Company.—Rich and Plurge and J. H. Brunning, Jr., have incorporated the Charleston Photo Engraving Co. with a capital of \$5,000.

Greenville—Bridge.—Contract will be let on October 7th for the construction of a new bridge

over Reedy river, near Greenville. Address L. K. Clyde, clerk to county commissioners.

Yorkville—Bridge.—Contract will be let on September 21 for building a bridge over Clark's fork, near Yorkville.

TENNESSEE.

Chattanooga—Engine Works.—Messrs. Truxal & Dunmeyer have obtained charter for the Truxal & Dunmeyer Manufacturing Co., and will issue stock to provide money for putting new machinery in its plant in order to increase the output of its automatic engine.

Chattanooga—Fibre Factory.—It is stated that the Standard Fibre Co., of Chicago, Ill., will establish in Chattanooga a hickory fibre factory. Its capital stock has been increased \$10,000, which is to be invested in the new plant, if built.

Clarksville—Bridge.—W. H. Converse, of Chattanooga, has contract to build a bridge across Red river at a cost of about \$10,000.

Elizabethhton—Canning Factory.—B. C. Hulsey, of Middlesborough, Ky., and J. A. Jones, of Elizabethhton, intend to establish a canning factory.

Elizabethhton—Knitting Mill.—J. A. Jones intends to start a knitting mill.*

Knoxville—Letter box Factory.—Mr. Steele and Alexander McMillan, of Knoxville, and John Faw, of Bristol, will organize a stock company for the purpose of establishing a plant for the manufacture of a letter box patented by Mr. Faw.

Knoxville—Steam Laundry.—Messrs. Wright & Henshaw are erecting a new steam laundry with entire outfit of new machinery made by the Wilson Laundry Machinery Co., of Columbia, Pa.

Memphis—Chair Factory.—The Commercial Association is endeavoring to organize a stock company with a capital of \$15,000 for the purpose of erecting and operating a chair factory.

Nashville—Mercantile Company.—W. C. Harris, Edgar Orgain, H. C. Lyle, Holmes Orgain and C. B. Lyle have incorporated the South Side Mercantile Co.

TEXAS.

Austin—Ferry Company.—A charter has been granted to the Stone City Ferry Co., of Brazos county, with J. E. Bishop, T. N. Graham and C. A. Haines as incorporators; capital stock \$5,000.

Austin.—The Hillsboro Lake Park Association has filed its charter at Austin. Incorporators, H. H. McKinnon and others; capital stock \$25,000.

Beaumont—Stave Factory.—J. P. Davies is arranging for the establishment of another stave factory in Beaumont.

Belton—Corn Mill.—Hodge & Long have erected a steam corn shucker and sheller.

Chillicothe—Flour Mill and Elevator.—A charter has been granted to the Chillicothe Mill & Elevator Co., of Hardeman county, with a capital stock of \$30,000. The incorporators are J. R. Thompson, Sr., J. R. Thompson, Jr., Ed and W. O. Rogers, J. H. Muckles, E. P. and J. L. Killebrew. A flour mill and grain elevator is now in course of erection.

Cleburne—Cotton Compress.—S. B. Allen, John Zimmerman and W. C. McFarland have incorporated the Cleburne Cotton Compress Co. for the purpose of operating a compress. The capital stock is placed at \$50,000.

Corrigan—Brick Works.—J. P. Dube has established works for the manufacture of bricks.

Dallas—Tin stamping Works.—B. A. Wambold, J. C. Ziegler, C. W. Taylor, J. S. Armstrong, T. C. Harry and associates, all of Galveston, will charter a company for the purpose of establishing tin-stamping works in Dallas. The capital stock of the company will be \$50,000.

Flatonia—Water Works.—Messrs. Bruce & Lester may build a water works system for Flatonia.

Fort Worth.—M. J. Archibald, D. A. Walker and E. J. Archibald have incorporated the Fort Worth Installment Co. with a capital stock of \$10,000.

Gainesville—Water Works.—The Gainesville Water Co. contemplates making extensive improvements to its works.

Houston—Cotton-tie Works.—A Mr. Penniman, of Chattanooga, Tenn., is corresponding with the president of the Commercial Club relative to the establishment of cotton-tie works in Houston.

Jefferson—Iron Foundry and Machine Works.—The Iron City Foundry & Machine Co., recently reported as incorporated, will succeed the Jefferson foundry and machine shop. The company's officers are J. M. De Ware, president; W. F. Atkins, treasurer, and W. Murray, manager, and its capital stock is \$25,000.

Mexia—Canning Factory, etc.—M. E. Roberts, J. W. Simmons, Joseph Nursbaum & Co., and others have organized a company to operate the Mexia canning factory. Corn-shellers and a mill for grinding chops will be put in.

San Antonio—Burner Company.—Daniel McCarty, Duval West, W. C. Robard and others have incorporated the Standard Burner Co. with a capital stock of \$600,000.

Velasco—Fence Factory.—F. R. Lubbock has started a fence factory. He uses the machine patented by J. B. Kline, of Sherman, Texas.

Woodville—Lumber Mill.—The Hoo-Hoo Lumber Co., lately reported (under Tyler) as incorporated, will operate a mill near Woodville.

VIRGINIA.

Alexandria—Manufactury.—The D. F. Saum Manufacturing Co., of Washington, D. C., will establish in Alexandria a factory for the manufacture of a rotating suspension cabinet and shelving and other light furniture.

Blackstone—Woodworking Factory.—The Blackstone Manufacturing Co. has been incorporated for the purpose of manufacturing wood work. Its capital stock is \$10,000.

Drewryville—Lumber Plant.—The Old Dominion Lumber Co. has put a Link automatic trimmer in its plant.

Ferrum—Corn Mill.—Mr. Wade will build a corn mill.*

Fredericksburg—Lumber Manufacturing.—R. E. McWhinney, G. C. Ball, S. W. Howard and P. H. Ball are the incorporators of the Rappahannock Boom & Lumber Co., reported several weeks ago; capital stock \$10,000.

Lynchburg—Sausage Factory.—C. P. Shaner will rebuild his sausage factory, reported last week as burned.*

Manchester—Manufactury.—A \$100,000 company will likely erect a manufactory to employ about 200 hands. Messrs. J. Thompson Brown & Co. are negotiating the purchase of a site for the parties who compose the company.

Norfolk—Oyster Company.—The North River Co. has been incorporated for the purpose of planting and dealing in oysters. Its capital stock is \$100,000.

Norfolk—Land Company.—A charter has been granted to the Columbia Land Co. with a capital stock of not less than \$10,000 nor more than \$25,000. It is privileged to own and operate factories, deal in real estate, etc. H. L. Page is president; A. S. J. Gammon, vice-president, and George W. Black, secretary and treasurer.

Norfolk—Saw Mill.—Messrs. Bull & Briggs and J. T. Deal have formed the South Norfolk Lumber Co. for the purpose of manufacturing lumber. They have contracted for machinery for a band mill and will erect same immediately.

Reed Island—Iron Mines.—The Reed Island Iron Co. will put in a new set of steam washers.

Salem—Electric-light Plant.—The city council has decided upon the purchase of the Salem Electric Co.'s lighting plant for \$19,000. For information address the mayor.

Standardsville—Copper Mines.—Copper ore has been discovered on the lands of John A. Shiflett near Standardsville, and he is now endeavoring to negotiate its sale to a California party.

WEST VIRGINIA.

Ceredo—Lumber Company.—J. A. Hughes, Z. T. Vinson, G. W. Hunt, Charles Nash and G. E. McDonald, all of Huntington, are the incorporators of the Twelve Pole Land, Lumber & Boom Co., reported in our last issue. The capital stock is placed at \$25,000.

Charleston—Brass and Iron Works.—A charter has been granted to the Powhatan Brass & Iron Works with its principal office at Charleston. V. A. Horden, W. H. Cummings, George Lane, Charles H. Simmons and Louis T. Merram all of Brooklyn, N. Y., are the incorporators. The capital stock is \$25,000, with privilege of increasing to \$50,000.

Charleston—Mining.—Wm. H. Bryant and F. L. Rondebusch, of Denver, Col.; George Davis, J. N. Carnes and J. A. McGuffin have incorporated the Baltimore Creede Mining Co.

Davis—Pulp Mill.—John G., D. L., Adam H. Thomas and Wm. A. Luke, all of Piedmont, have incorporated the West Virginia Pulp Co. with a capital stock of \$30,000 and privilege of increasing to \$200,000. The company will build the pulp mill recently reported.

Davis—Sash and Door Factory.—James Green will erect a sash and door factory. The machinery has been purchased and work on buildings commenced.

Morgantown—Carriage Factory.—Messrs. Lough Bros., of Cassville, will remove their carriage factory to Morgantown.

Parkersburg—Lysander Dudley, H. M. Smith, J. W. Wolf and S. Stone, all of Parkersburg, have incorporated the American Hernia Co. with an authorized capital stock of \$10,000.

Point Pleasant—Furniture Factory.—R. W. Sterling and associates have incorporated the

Furniture Manufacturing Co. of Point Pleasant for the purpose of operating a furniture factory.

Conceverte—Woodworking Factory.—Brown Bros. are erecting a woodworking factory.

St. George—Lumber Mills.—The Glen Boom & Lumber Co., recently incorporated, is erecting mills in Tucker county.

Wheeling—Drug Company.—R. T. Devries, J. A. Campbell, R. T. Dovier, Jr., George Breideng and W. A. Milligan have incorporated the Wheeling Drug Co. with a cap'tal stock of \$300,000.

BURNED.

Kensington, Ga.—Lilley & Hillsley's machinery works; loss \$30,000.

Kensington, Ga.—The Kensington Land Co.'s electric-light plant; loss about \$9,000.

Marble Falls, Texas.—John Andrews's cotton gin and grist mill.

Normandale, Ga.—The Normandale Lumber Co.'s saw mill plant; loss over \$150,000.

BUILDING NOTES.

Atlanta, Ga.—Armory.—The erection of an armory to be jointly used by the Atlanta militia is projected. A five or six-story building to cost from \$50,000 to \$60,000 is contemplated. Col. W. L. Calhoun can give information.

Atlanta, Ga.—C. W. Smith, architect, reports that plans are prepared and contract will shortly be let for a four-story brick and stone building for the Southern Bell Telephone Co. It will cost about \$30,000.

Baltimore, Md.—Hall.—The hall to be erected for the Frohsinn Singing Society will be 60x70 feet and cost about \$35,000. Work will not be commenced before next spring.

Baltimore, Md.—Chapel.—The Cross Street Methodist Church will erect a two-story brick chapel.

Batesville, Ark.—J. W. Evans and J. W. Fletcher will erect a two-story stone business block.

Charlottesville, Va.—R. H. Rawlings will erect a business building.

Clinton, Tenn.—College.—The Knights of Pythias of East Tennessee contemplate building a \$30,000 college in Clinton for females.

Columbus, Ga.—School Building.—C. W. Smith, of Atlanta, is preparing plans for an eight-room brick and stone school building to be erected in Columbus. It will cost about \$25,000.

Jamestown, N. C.—Clubhouse.—A. A. Holton has, it is stated, arranged for the erection of a \$100,000 clubhouse near Jamestown by the Eastern Field Trial Club, of New York and Philadelphia.

Jordan Springs (P. O. Stephenson), Va.—Hotel, Seabright & Hoover have commenced the erection of a hotel.

Macon, Ga.—Public Building.—W. J. Edbrooke, supervising architect, Treasury Department, Washington, D. C., will receive proposals until September 29 for all the labor and materials required for certain repairs to the United States courthouse and postoffice building at Macon.

Norfolk, Va.—Engine-house.—The city contemplates erecting an up-town engine and station-house.

Orlando, Fla.—Church.—Plans have been adopted by the Baptists for a new church.

Oxford, N. C.—Church.—Steps are being taken by the Protestant Episcopalians to complete a large stone church, work on which was started in 1856 and discontinued after the walls were up. J. H. Willis can give particulars.

Roanoke, Va.—Noland & de Saussure have prepared plans for a three story store, office and hotel building 25x57 feet for the Traders' Investment Co.

San Antonio, Texas—College.—It is stated that several Catholic bishops of Mexico will build a \$250,000 college in San Antonio; also that the Christian Brothers will erect a college to cost between \$50,000 and \$75,000.

Sherman, Texas—School Building.—The plans for the high school building lately mentioned as prepared by Thomas Wood, of Sherman, provide for a two-story brick, granite and marble structure 73x73 feet to cost about \$25,000.

Suffolk, Va.—Church.—Charles E. Casse'l, of Baltimore, prepared plans for the edifice being built for the Christian Church. It will cost \$20,000.

Tazewell C. H., Va.—Hotel.—Efforts are being made to organize a stock company to build a hotel.

Trion Factory, Ga.—Church—Hunt & Lamm, of Chattanooga, Tenn., will furnish plans for a brick church to be built by the Baptists. Contract has not been let.

Washington, D. C.—F. G. Burger has awarded contract to F. H. Duehay for an \$18,000 residence. It will be heated by steam, have electric lights, etc. T. F. Schneider prepared the plans.

Washington, D. C.—A. P. Clark, Jr., will prepare plans for the new building for the *Post*.

Williamson, W. Va.—Hotel and Bank Building.

Veazey & Richardson have contract for building a hotel and bank building.

Winona, Miss.—Hotel.—Hunt & Lamm, of Chattanooga, Tenn., will furnish plans for a three-story 30 room hotel to be built by J. C. Purcell and others.

RAILROAD CONSTRUCTION.

Boggy Tank, Texas—Railroad.—Burkitt, Burns & Co., contractors for the extension of the Missouri, Kansas & Texas Railroad (office, Denison) from Boggy Tank to Houston a distance of eighty-seven miles, have commenced work. They have repaired the old grade from Smithville to Lockhart, thirty-six miles, and are putting down rails on that branch.

Bristol, Tenn.—Railroad.—The Holston Valley Railroad Co. has been chartered to build a railroad from Bristol to Damascus, a distance of twenty miles.

Columbia, S. C.—Electrical Railroad.—The Columbia Electric Street Railway Co. has awarded contract for the equipment of its road with the Short electric system.

De Witt, Ark.—Railroad.—The extension of the Stuttgart & Arkansas River Railroad (office, Stuttgart) from De Witt to Pendleton is being actively pushed, and tracklaying is in progress.

Dublin, Ga.—Railroad.—The purchasers of the Empire & Dublin Railroad contemplate, it is stated, completing the nine miles necessary to finish the road to Dublin, also the extension of it from Dublin to Fort Valley. Claude Estes, of Macon, can give particulars.

El Paso, Texas—Railroad.—The Denver & El Paso Railway Co., previously noted as chartered at Denver, Col., to build a railroad from that city via Pueblo, Trinidad, Las Vegas and White Oaks to El Paso, will shortly place bonds on the market to obtain funds for construction.

Florence, Ala.—Railroad Bridge.—The Detroit Bridge Co., of Detroit, Mich., has, it is understood, secured contract for the iron work of the new bridge to be built across the Tennessee river at Florence by the Memphis & Charleston Railroad Co. The superstructure will cost, it is stated, \$177,000.

Glyndon, Md.—Electrical Railroad.—The Western Maryland Land Improvement Co. is reported to build an electrical railroad.

Houston, Texas—Railroad.—E'ven miles of the grading on the La Porte & Houston Railroad is completed, and the line will be ready for the rails by the middle of October. As soon as grading is completed the laying of steel rails will be started.

Montgomery, Ala.—Electrical Railroad.—The West End & Riverside Street Railway Co., reported in last issue as awarding contract for building its electrical railroad, will be chartered by S. D. Seelye and associates with a capital stock of \$100,000.

Mount Carbon, W. Va.—Railroad.—The preliminary survey for the Powelton & Pocahontas Railroad has been commenced. The road is now built and in operation from Mount Carbon station, on the Chesapeake & Ohio road, to Mount Carbon mines, and the extension will be from that point through east to the Norfolk & Western, a distance of something over sixty miles.

Natchez, Miss.—Railroad.—The Natchez, Alexandria & Texas Railroad Co. has been chartered with Charles E. Roberts, president; J. G. White, vice-president; R. W. Bringhurst, secretary, and G. A. Roberts, treasurer. The road will run in a southwesterly direction from Natchez through the parishes of Concordia, Catahoula, Rapides, Vernon and Sabine in Louisiana, and the counties of Newton and Jasper in Texas. It is stated that a surveying corps will be put in the field at once, and that the company expects to begin building as soon as the right of way and other preliminaries can be arranged. The capital stock is \$4,000,000, and it is claimed enough is now subscribed to build ninety miles of the road.

New Orleans, La.—Street Railway.—Judah Hart has purchased from the city a franchise to build a street railway along Canal and other streets.

Radford, Va.—Electrical Railroad.—M. A. Rife, of Roanoke, who has franchise to build a street railway, will, it is learned, build an electrical road if relieved of the obligation to keep thirty-six inches of street outside of the rails repaired.

Savannah, Ga.—Electrical Railroad.—The Savannah Electric Railroad Co. will shortly commence the extension of its road to the railroad wharves at a cost of about \$50,000.

Savannah, Ga.—Railroad.—The survey of the extension of the South Bound Railroad from Savannah to Hart's Road, Fla., is being actively prosecuted. The route as planned will make the line 107 miles long. Thomas D. Lee, of Columbia, S. C., is in charge of the survey. It is expected to give out a contract for the road between Savannah and Jamaica, a distance of about sixty miles, by November 1, and it is intended to have the whole line completed and in operation by October 1893.

Washington, D. C.—Electrical Railroad.—An-

drew Gleeson has contract and commenced work on the electrical railroad to be built to Takoma Park by the Brightwood Railway Co.

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Barb-wire Machinery.—The Columbia Barb Nail Co., Kanawha City, W. Va., wants barb-wire machinery.

Bark Mills.—Alexander Zeck, Grafton, W. Va., wants addresses of manufacturers of bark mills.

Bed Springs.—The Houston Heights Spring Bed & Mattress Co., Houston, Texas, wants machinery for manufacturing bed springs.

Boiler.—The Jones Lumber Co., Williamsburg, Ky., wants a boiler.

Boiler.—Boiler will be wanted. Address E. Johnson, Leesburg, Fla.

Boiler.—The Lexington Chair Factory, J. W. Day, superintendent, Lexington, Va., will purchase a boiler.

Boiler.—C. P. Shaner, Lynchburg, Va., wants a boiler.

Boiler.—Thomas L. Holt, Burlington, N. C., wants prices on a second-hand locomotive boiler of 120 horse-power.

Boilers.—The East Lake Industrial Association, East Lake, Ala., will need boilers. Robt. W. Huey, president.

Boiler and Engine.—S. L. Williams, Shenandoah Junction, W. Va., wants an eight-horse-power locomotive boiler, detached, and engine, side crank.

Canning Machinery.—The East Lake Industrial Co., East Lake, Ala., Robt. W. Huey, president, wants catalogues of canning machinery.

Corn Mill.—Mr. Wade, Ferrum, Va., wants corn-mill machinery.

Cotton-mill Machinery.—Thomas L. Holt, Burlington, N. C., wants second-hand cotton-mill machinery for coarse numbers, carding and spinning.

Cotton-mill Machinery.—The Rock Hill Cotton Factory Co., D. Hutchison, treasurer, Rock Hill, S. C., wants prices on about 250 looms.

Creosoting Plant.—L. J. Kopke, Beaumont, Texas, wants estimates on the cost of a creosoting plant of ordinary capacity for piling and bridge timbers.

Dry-kilns.—Messrs. Gray & Gatchell, Leliaton, Ga., will purchase two dry-kilns.

Electric light Plant.—The Florence Mills, Forest City, N. C., may want an electric-light plant.

Enameling Outfits.—H. D. Spore & Co., Houston, Texas, will buy enameling outfits.

Engine.—The Lexington Chair Factory, J. W. Day, superintendent, Lexington, Va., will purchase an engine.

Engine.—C. P. Shaner, Lynchburg, Va., wants an engine.

Engine.—Thomas L. Holt, Burlington, N. C., wants prices on a second-hand engine of 120 horse-power, guaranteed to be in good order.

Engine.—The Rock Hill Cotton Factory Co., D. Hutchison, treasurer, Rock Hill, S. C., wants an engine of 120 horse-power.

Engine.—Jonas Slusser, Fincastle, Va., will need a twenty-horse-power engine.

Engine.—Cowan & Geor, Worth, Ga., will want to buy a seventy-five or eighty-horse-power engine.

Engine.—The Jones Lumber Co., Williamsburg, Ky., wants an engine.

Engine.—Engine will be wanted. Address E. Johnson, Leesburg, Fla.

Engines.—The East Lake Industrial Co., East Lake, Ala., will need engines. Robt. W. Huey, president.

Engine and Boiler.—Lafayette Holt, Burlington, N. C., wants to buy good second-hand 125 to 150 horse-power Corliss engine and boiler.

Flour Mill.—Jonas Slusser, Fincastle, Va., wants to buy outfit for a roller-process flour mill.

Furniture Machinery.—The East Lake Industrial Co., East Lake, Ala., wants catalogues of furniture machinery. Robt. W. Huey, president.

Galvanizing Plant.—The Columbia Barb Nail Co., Kanawha City, W. Va., wants galvanizing plant.

Grist Mill.—R. E. Hale, Callaway, Va., wants to buy a second-hand grist mill.

Heating and Ventilating Apparatus.—W. J. Edbrooke, Washington, D. C., will receive sealed proposals until September 28 for furnishing steam heating and ventilating apparatus for the U. S. postoffice building at Hoboken, N. J. (See ad.)

Hoisting Machinery.—The Columbia Barb Nail Co., Kanawha City, W. Va., wants hoisting machinery.

Knitting Mill.—Quote prices on knitting mill machinery and furnish information to J. A. Jones, Elizabethton, Tenn.

Lathes.—H. D. Spore & Co., Houston, Texas, will buy lathes.

Lath Machinery.—The Jones Lumber Co., Williamsburg, Ky., wants lath machinery.

Laundry Machinery.—The East Lake Industrial Co., Robt. W. Huey, president, East Lake, Ala., wants catalogues of laundry machinery.

Mattress Machinery.—The Houston Heights Spring Bed & Mattress Co., Houston, Texas, wants mattress machinery.

Mattress Machinery.—W. H. Pearce, Saluda, N. C., wants to correspond with makers of mattresses for preparing shucks and other mattress machinery.

Motor.—H. D. Spore & Co., Houston, Texas, will buy motor for running electric nickel plating outfit.

Nickel-plating Outfits.—H. D. Spore & Co., Houston, Texas, will buy nickel-plating outfit.

Pipe.—Quotations are wanted on upward of 5,000 feet of water pipe, 4-inch "cast," second-hand, to stand about 100 pounds pressure. Terms cash. Address "Alabama," care of MANUFACTURERS' RECORD.

Planer.—W. W. Warren, Jumping Branch, W. Va., may need a planer later on.

Planer.—The Jones Lumber Co., Williamsburg, Ky., wants a planer.

Planer.—Messrs. Gray & Gatchell, Leliaton, Ga., will purchase two planers.

Press Machinery.—The King Manufacturing & Implement Co., Room 31, Johnston building, Cincinnati, Ohio, will need some press machinery.

Pumps, etc.—The mayor of Lakeland, Fla., wants prices on artesian well pumps, fountains and supplies.

Quilting Machinery.—W. H. Pearce, Saluda, N. C., wants to correspond with makers of quilting machinery.

Railroad Iron.—The Columbia Barb Nail Co., Kanawha City, W. Va., wants small railroad iron.

Rails.—The Columbia Granite Co., Middletown, Conn., will need sixty to seventy-five tons of 56 to 60-pound steel rails, either new or second-hand. Address A. L. Himmelwright, general manager.

Riveting Machinery.—The Augusta Factory, Stewart Phinizy, president, Augusta, Ga., wants machinery to rivet and re-roll cotton ties. Give full particulars and price delivered.

Roofing.—W. W. Warren, Jumping Branch, W. Va., wants prices on iron roofing.

Roofing.—The Florence Mills, Forest City, N. C., will want roofing.

Rolling Machinery.—The Augusta Factory, Stewart Phinizy, president, Augusta, Ga., wants machinery to re-roll and rivet cotton ties. Give full particulars and price delivered.

Sausage Machinery.—C. P. Shaner, Lynchburg, Va., wants a No. 1 Buffalo chopper and a stuffer.

Sausage Machinery.—Complete outfit of machinery for manufacturing sausage is wanted. Address L. P. O. Box 441, Anniston, Ala.

Saw Mill.—The Lexington Chair Factory, J. W. Day, superintendent, Lexington, Va., will want a small saw mill.

Saw Mill.—The Jones Lumber Co., Williamsburg, Ky., wants a log band mill.

Saw Mill.—W. W. Warren, Jumping Branch, W. Va., may need saw-mill machinery later on.

Saw-mill Machinery.—Cowan & Geor, Worth, Ga., will likely want to buy some saw-mill machinery.

Scales.—The Columbia Barb Nail Co., Kanawha City, W. Va., wants railroad track scales.

Surfer and Matcher.—The Blue Ridge Lumber Co., Dillsboro, N. C., will purchase a 24-inch double surfer and matcher.

Tank.—C. P. Shaner, Lynchburg, Va., wants a 150-gallon tank (drop bottom).

Valves.—Capt. Geo. W. Goethals, Florence, Ala., will receive sealed proposals until September 30 for iron valves for locks on Muscle Shoals canal.

Veneer Mill.—Veneer mill will be wanted. Address E. Johnson, Leesburg, Fla.

Water Works.—Bids will be received until October 11 for the erection of a system of water works at Cynthiana, Ky. The mayor will furnish plans and specifications on application and any desired information.

Wireworking Machinery.—The Flexible Wire Plow Line Co. is in the market for machinery. J. A. Spain, secretary and treasurer, Columbus, Ga.

Messrs. Perry & Greer, of Graham, Va.,

want to purchase flour barrels and would like to have quotations.

N. H. Farquhar, Washington, D. C., will receive sealed proposals until September 27 for dredging at the navy-yard, Brooklyn, N. Y.

The Columbia Granite Co., Middletown, Conn., A. L. Hinmanwright, general manager, wants proposals for the construction of a pile dock on the Connecticut river.

The King Manufacturing & Implement Co., Room 31, Johnston building, Cincinnati, Ohio, will want some light sheet metal drawing done, and would like the addresses of good firms who are fitted for this class of work, with their catalogues showing kind they do.

Wm. F. Smith, U. S. agent at Wilmington, Del., will receive sealed proposals until October 7 for dredging in Warwick river, Md., Lataripe river, Md., Wicomico river, Md., Manokin river, Md., and Onancock harbor, Va. (See ad.)

W. W. Warren, of Jumping Branch, W. Va., wants prices on bed springs, mattresses, furniture, blacksmiths' tools, etc.

SOUTHERN FINANCIAL NEWS.

NEW BANKS.

Baltimore, Md.—The Canton National Bank has been organized with Martin Wagner, president, and J. H. W. Geiger, cashier. The capital stock is \$50,000.

Cochran, Ga.—The Cochran Banking Co. has commenced business with A. J. Thompson, president; J. J. Taylor, vice-president, and Z. H. Clark, cashier. The capital stock is \$25,000.

Conway, S. C.—The Horry Savings Bank, of Horry county, has been chartered by B. G. Collins, Enoch S. Baker, J. A. Maya and others. The capital stock is \$30,000.

Florence, S. C.—The South Carolina Banking Association has been chartered with a capital stock of \$12,500.

Middlesborough, Ky.—The First National Bank, which was closed by order of the bank examiner, will probably soon resume business. A plan of reorganization has been agreed upon by the stockholders which provides for the cancellation of \$25,000 of the capital stock of \$50,000 and the issuance of \$25,000 of new stock to be subscribed for at par.

Muenster, Texas.—Powers & Peifer have started a banking business.

Taylor, Texas.—The organization of a new bank is probable.

Way Cross, Ga.—The Way Cross Loan & Banking Co. has been organized with J. S. Tart, manager, and will apply at the next session of the legislature for a charter.

Charlottesville, Va.—The bonds to be voted on at the general election in November will be \$125,000 of 20 year 5 per cents. The city has not authority to issue bonds for a longer period, as was intended.

Crossville, Tenn.—The issuance of \$50,000 of bonds in aid of the Nashville & Knoxville Railroad is being advocated.

Dawson, Ga.—The Dawson Investment Co. has declared a dividend of 5 per cent.

Greenville, Texas.—The city has issued \$5,000 of water works bonds.

Greenwood, S. C.—The People's Building and Loan Association has been chartered with W. B. Millwee, president.

Griffin, Ga.—The city has voted to issue \$35,000 of water works bonds.

Houston, Texas.—The Houston Abstract Co. has been chartered by H. F. Ring, J. A. Baker, Jr., Rufus Cage and others. The capital stock is \$50,000.

Huntsville, Ala.—The Huntsville Cotton Mill has declared a dividend of 8 per cent.

Memphis, Tenn.—The Memphis Gas Light Co. has executed a mortgage on all its property, with the Manhattan Savings Bank & Trust Co. as trustee, to secure an issue of 400 \$1,000 30 year 6 per cent. bonds. Sixty of these bonds will be issued at once, but the remainder are to be held to retire bonds issued by the company in 1873.

Newbern, N. C.—The Atlantic & North Carolina Railroad Co. has declared a dividend of 2 per cent.

Norfolk, Va.—The issuance of \$15,000 of schoolhouse bonds is contemplated.

Paris, Texas.—In accordance with the plan of reorganization, the International & Great Northern Railroad Co. has executed a mortgage on its property, with the Mercantile Trust Co., of New York city, as trustee, to secure an issue of \$3,000,000 of third mortgage bonds. The bonds are issued to cover advances on the part of the stockholders to the amount of \$2,784,127 \$5 to meet matured indebtedness of the company, consisting of defaulted interest of May 1, 1889, and September 1, 1891, respectively, of the first and second mortgage bonds, and a judgment in favor of Jay Gould, recorded in March, 1889. The first mortgage bonds amount to \$7,054,000, second mortgage, \$7,054,000, and the Gould judgment, \$56,962.12. They are 30-year 4 per cent. bonds, but

payable during the first six years out of the net earnings of the company.

Salem, Va.—The town will issue \$19,000 of 6 per cent. 20 year bonds to pay for an electric plant recently purchased. The mayor can give particulars.

Staunton, Va.—The Columbian Accident Association has been chartered, with John D. Crowle, president. The capital stock is \$100,000.

TRADE NOTES.

THE Buena Vista (Va.) Plumbing & Heating Co. has obtained contract to furnish the steam-heating apparatus for the public buildings at Chattanooga, Tenn.

A PRINTER'S error in our last issue made the Southern Emery Wheel Co., of Tallapoosa, Ga., offer "emery" wheels in their advertisement. We mention this merely to inform our readers that this company knows very well two things—how to spell "emery" and how to make emery wheels.

A BANK is a much-needed and sought-after institution by a large number of Southern towns. The attention of such places as are anxious for the establishment of a bank is directed to an offer by "Western Banker," care of the MANUFACTURERS' RECORD, to locate one in some growing town of the South.

THE Gandy Belting Co. advises us that by decision of the United States Supreme Court rendered at Washington March 7, 1892, Maurice Gandy was sustained in his patents for the manufacture of a stitched cotton duck belt in the United States, and the Gandy Belting Co., of Baltimore, Md., are alone authorized to manufacture the same.

THE Valley Pump Co., of Easthampton, Mass., has the contract to furnish pumps, water wheel, shafting, gearing and penstock for the new pumping station at Easthampton. The pumps are 14-inch duplex, inside plungers, capable of putting 1,000,000 gallons every twenty four hours into the reservoir, two miles distant and 260 feet above the pump. They expect to start the new pump November 1, 1892.

THE Carver Cotton Gin Co., of East Bridgewater, Mass., has been very busy in its shoe machinery, cotton gin and oil mill machinery branches. During the past month it has shipped more linters and oiled oil mill supplies than in any corresponding month since 1887, when it fitted up the Southern Cotton Oil Co. It has fitted up over fifteen new oil mills so far this season with its machinery.

THE Howard Foundry and Machine Works, of Philadelphia, Pa., state that there is a growing demand for larger paper making machinery which they manufacture. They have just completed a 144 inch loom for wire cloth for the De Witt Wire Cloth Co., of Philadelphia. This is the largest loom of the kind in this country. A large number of orders are on hand for their new power elevators and other machinery.

THE Enterprise Safety Elevator Co., of Chattanooga, Tenn., has just completed a hydraulic passenger elevator in the First National Bank building at Fostoria, Ohio. Upon trial the elevator proved so satisfactory that two other orders were secured in the same city, one for a hydraulic passenger and one for a hydraulic freight elevator. A number of other orders have been secured in both Northern and Southern States.

THE Fair Co., one of the largest retail stores of Chicago, has just purchased from the Lodge & Davis Machine Tool Co. of that city an equipment of machine tools for repairing elevators, electric light machinery, etc. The Lodge & Davis Machine Tool Co. has just contracted to furnish a large equipment of improved lathes, planers, drill presses, etc., to the Georgia School of Technology shops at Atlanta, Ga., which recently burned out.

THE Peck Manufacturing Co., of Sioux City, Iowa, has recently opened a Chicago office at 62 South Canal street in order to handle rapidly increasing business in the States of Illinois, Wisconsin, Indiana and Michigan. Mr. E. D. Nichols has been placed in charge of the Chicago office, where he carries a large line of well supplies. The Peck company intends to open a Southern office in the near future, which will undoubtedly be located in Texas.

THE Grinnell automatic sprinkler placed in the *Herald* office at Glasgow protected that building from catching fire when the adjoining building was in flames. The proprietors of the *Herald* state that the automatic sprinklers, in connection with the external roof and window drenchers, were the means of saving the building. Some of the panes of windows most exposed to the flames were merely cracked, while the paint of the frames was not even blistered.

THE Common Sense Engine Co., formerly of Springfield, Ohio, has completed the erection of its new works at Muncie, Ind., and will shortly

have 200 hands employed. The building is a model one in every respect, and the machinery the best that can be secured for their purposes. Stationary engines, grinding mills, hay rakes, planters and other machines will be made. S. Campbell Janney is president and treasurer; T. A. Neeley, secretary, and W. H. Printz, superintendent.

THE General Electric Co. has recently secured a contract, against keen competition, whereby it is to supply to the Cass Avenue Street Railway Co., of St. Louis, Mo., eighty-five cars, each equipped with two twenty-five horse-power motors of the well-known standard W. P. type, three 800 horse power direct coupled railway generators at a speed of about ninety revolutions. By this purchase by the Cass Avenue company the entire system of electrical railroads in St. Louis is now solely equipped with apparatus manufactured by the General Electric Co.

THE National Building Supply Co., of Baltimore, Md., has issued an interesting little pamphlet describing various cements which they handle and giving numerous useful memoranda and tests which will be valuable to the contractor. Different kinds of plaster, lime, building hair and fibre, roof tiles, shingles and a variety of things needed by the builder are noticed, and with each is given some useful information. This company handles all classes of material required for building, and have accommodations which enables them to keep a large supply constantly on hand.

THE Elmira Electric Illuminating Co. is building a new plant at Elmira, N. Y., and has placed the contract for the iron roofs with the Berlin Iron Bridge Co., of East Berlin, Conn. The dynamo-room will be 66 feet wide by 177 feet long, covered with the Berlin company's patent anti-condensation corrugated iron roofing, the floor space being controlled by a 10-ton traveling crane. The boiler-room will adjoin the dynamo-room, and will be thirty-two feet wide by seventy-five feet long. When completed this will be one of the finest electric-light plants in New York State.

THE J. B. Allfree Manufacturing Co., Indianapolis, reports a rapidly increasing trade in cast pulleys. This firm already has an enviable reputation in contracting and furnishing flour mills, and use a large number of pulleys in connection with this business. They recently patented a pulley finishing machine which enables them to give unusually low prices on cast pulleys up to forty-two inches in diameter. Orders for these goods have been coming in so rapidly that they have been compelled to start their third pulley machine, and they have another in course of construction.

THE DeLoach Mill Manufacturing Co., of Atlanta, Ga., state that they believe trade is going to be quite active within the next few weeks. Recently they have shipped saw mills to Pennsylvania, Ohio, Indiana, Iowa, Oregon and many of the Southern States. Regarding their mill, the St. Louis Repair & Transfer Co., of St. Louis, write that the variable friction-feed mill made by the DeLoach Co. is one of the most simple, quick and reliable feeds made, and that owing to its rapid backing movement and easy operation, it comes nearer keeping the saw in the log than any machine that they know of.

MESSRS. Kehrhahn & Co., of Baltimore, Md., have become the sole agents in the United States for the Liverpool Boiler Fluid & Detergent Co., and will handle the Glenfield boiler cleaning fluid, so favorably known to engineers. This fluid has been approved by the officers of Her Majesty's Royal Arsenal, and is used by nearly all the large steamship and railroad companies in Europe. For surface condensers the fluid is invaluable, as it perfectly frees the tubes from all greasy or other matter. E. Ernest Graves, a well-known London chemist and physicist, has testified that the fluid is the best boiler scale exterminator he has ever seen, and this opinion has been confirmed by many leading engineers. It is suited for marine, locomotive or stationary boilers, and largely used in breweries and distilleries. Another point about it is that it acts as a strong disinfectant.

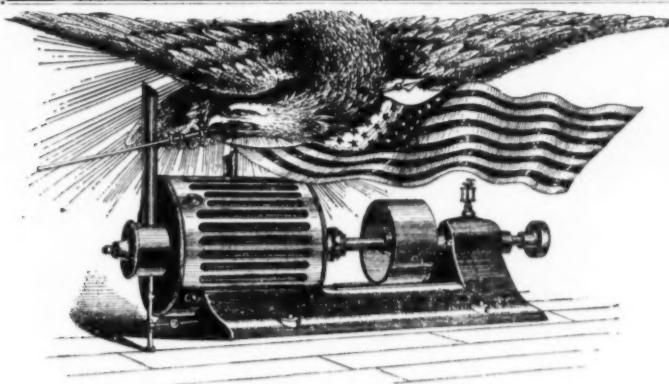
THE Edward Corbett Co., of Salem, Va., builders of flour and corn machinery, has just started up a 35-barrel mill at Leaksburg, N. C.; also a 100-barrel mill at South Boston, Va., and is now shipping machinery to Graham, N. C., for a 25-barrel mill. It is putting in rolls for Mr. E. T. Dooley, Alleghany Springs, Va., who will soon start. It also has a mill in Pennsylvania, which will start in a few days; also one in Maryland, which will also start up in a short time. One of its mills near Natural Bridge started last week. It is now at work on the Bonsack mill for Messrs. Kirby & Thomas; has just placed an engine and boiler for J. B. Stone, Castor, Va., and a cleaner for J. T. Morehead, Spray, N. C.; has just closed contract for a 40-barrel mill for W. W. Warren, Jumping Branch, W. Va., and a contract with Mrs. Sarah J. Slater, Crockett, Va., for a 30-barrel mill; another with F. S. Welsh & Co., Clito, Grayson county, Va., for a 40 barrel mill. It is also putting in a purifier for Hanmer Teague & Co., High Point, N. C.

Where to Locate New Factories

Is the title of a 150-page pamphlet recently published by the passenger department of the Illinois Central Railroad, and should be read by every mechanic, capitalist and manufacturer. It describes in detail the manufacturing advantages of the principal cities and towns on the line of the Southern Division of the Illinois Central and the Louisville, New Orleans & Texas Railroads, and indicates the character and amount of substantial aid each city or town is willing to contribute. It furnishes conclusive proof that the South possesses advantages for the establishment of every kind of factory working wool, cotton, wood or clay. For a free copy of this illustrated pamphlet address Mr. J. F. Merry, Assistant General Passenger Agent I. C. R. R., Manchester, Iowa.

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AMERICAN HIGH SPEED ENGINE.

This Engine revolutionizes the manner of applying steam in generating power. It can be regulated so as to run at any speed desired, up to

1000 OR MORE REVOLUTIONS PER MINUTE!

It is not a rotary Engine, yet the motion of its parts is such that there are no "dead centers." It takes steam and exhausts four times at each revolution. For

SPEED, SIMPLICITY AND ECONOMY,

this Engine has no equal. It possesses many striking advantages over all other Engines, either slow speed or so-called high speed. Its speed is closely regulated by a sensitive and reliable automatic governor. Built of any required size,

FOR ALL STATIONARY AND MARINE PURPOSES.

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We have no Agents.

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People's National Bank Building, Lynchburg, Va.

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RAILWAY EQUIPMENT,

Mining and Contractors' Supplies.

Rails, Fastenings and Rolling Stock; Bar, Band, Hoop and Sheet Iron; Wire and Wire Nails; Steel and Iron Cut Nails; Bar and Tool Steel; Horse and Mule Shoes; Wire Rope and Machined Cotton Waste; Wrought Iron Pipe; Iron and Steel Roofing; Blasting Powder.

SOUTHERN LUMBER DIRECTORY.

A List of Leading Lumber Dealers and Manufacturers in the South.

This list of representative Southern lumber merchants and manufacturers is published for the benefit of those who desire to reach responsible houses in this branch of business in the South. Readers of the MANUFACTURERS' RECORD who have occasion to correspond with any of the firms mentioned below will confer a favor by mentioning this paper.

Yellow Pine.

I. B. Gordon & Co., Alpine, Ala.
Villa Rica Lumber Co., Anniston, Ala.
J. R. Adams & Sons, Birmingham, Ala.
Hawkins & Smith, Birmingham, Ala.
C. T. Hughes & Co., Birmingham, Ala.
Riddle & Simpson, Birmingham, Ala.
Southern Supply Co., Birmingham, Ala.
Marbury & Jones, Bozeman, Ala.
D. W. & U. Blacker, Brewton, Ala.
W. W. Weaver, Castleberry, Ala.
J. A. Dudley, Clanton, Ala.
O. A. Duke, Clanton, Ala.
L. B. Wells, Clanton, Ala.
H. C. Higman & Co., Decatur, Ala.
Dunham Lumber Co., Dunham, Ala.
Gadsden Lumber Co., Gadsden, Ala.
Tuscaloosa Lumber Co., Hull, Ala.
Bay City Lumber Co., Mobile, Ala.
E. B. Vaughn, Mobile, Ala.
Alabama Lumber Syndicate, Montgomery, Ala.
S. B. Allen & Co., Montgomery, Ala.
W. A. Drives & Co., Montgomery, Ala.
Moore, Kirkland & Co., Montgomery, Ala.
Wagar Lumber Co., Wagar, Ala.
W. W. Wadsworth, Wadsworth, Ala.
Arkadelphia Lumber Co., Arkadelphia, Ark.
Empire Lumber Co., Ashton, Ark.
Long Bell Lumber Co., Buckner, Ark.
Cotton Belt Mill Co., Cotton Belt, Ark.
Eagle Lumber Co., Eagle Mills, Ark.
Red River Lumber Co., New Lewisville, Ark.
A. J. Neimeyer Lumber Co., Waldo, Ark.
Fordyce Lumber Co., Fordyce, Ark.
The Florida Phosphate Co., Ltd., Phosphoria, Fla.
J. S. Betts & Co., Ashburn, Ga.
Gress Lumber Co., Atlanta, Ga.
Wilson Coal & Lumber Co., Atlanta, Ga.
Donalson Lumber Co., Donalsonville, Ga.
Ocean Springs Lumber Co., Ocean Springs, Miss.
Perkins Manufacturing Co., Augusta, Ga.
Stillwell, Millen & Co., Savannah, Ga.
F. F. Putney, Hardaway, Ga.
Charles Bewich & Co., Hazelhurst, Ga.
Alderfer & Bull, Isabella, Ga.
Hogan & Winger, Kensington, Ga.
J. A. Williams, Sumner, Ga.
A. J. Duncan & Co., West Bowersville, Ga.
W. E. Mayne, Carpenter, Ky.
P. Hendrickson, Conant, Ky.
Perkins & Miller Lumber Co., Ltd., Westlake, La.
Lock-Moore & Co., Ltd., Westlake, La.
R. J. Aycock, Longstreet, La.
C. P. Brasher, Marthaville, La.
Joseph Horst, Maugansville, Md.
Elliott, Crawford & Co., Myrtle, Miss.
P. B. Myers & Son, Myrtle, Miss.
B. J. Cansey, West, Miss.
Cary E. Spence, Pass Christian, Miss.
Keystone Lumber & Imp. Co., Bogue Chitto, Miss.
J. S. Blackburn, Ellisville, Miss.
R. F. Moss, Booker, Va.
The A. F. Withrow Lum. Co., Millboro Depot, Va.
U. B. Simpson & Son, Naruna, Va.

North Carolina Pine.

Page Lumber Co., Aberdeen, N. C.
The Greenville Land & Imp. Co., Greenville, N. C.
Guilford Lumber Mfg. Co., Greensboro, N. C.
Goldsboro Lumber Co., Goldsboro, N. C.
G. Vyne & Son, Wilkesboro, N. C.
John Hickson & Co., Lynchburg, Va.

Cypress.

Morris & England, Keo, Ark.
Cypress Lumber Co., Sherrill, Ark.
T. O. Wilson Lumber Co., Tilar, Ark.
Nuchner & Brown, Peach Orchard, Ark.
Moline Lumber Co., Helena, Ark.
J. M. Milburn & Bro., Greenway, Ark.
J. C. McCaughan, Greenway, Ark.
Lawless & Kyle, Franklin, La.
Louisiana Cypress Lumber Co., Harvey, La.
Callahan & Lewis Mfg. Co., Patterson, La.
W. R. Emerau, Emerson, Fla.
J. C. Burleigh, Midland, Fla.
F. S. Bamberg, Jasper, Fla.
S. J. Temple, Temple's Mills, Fla.
J. F. Little, Sumner, Fla.
Geo. H. Barker, Waldo, Fla.
A. A. Bunnell, Raulerson, Fla.
Windemere Land & Lumber Co., Windemere, Fla.
Kelly, Cosby & Co., Jug Tavern, Ga.
Dietrich & Dopson, Lenox, Ga.
W. T. McArthur, McArthur, Ga.
W. H. Moxley & Co., Macon, Ga.
W. R. Peterson & Co., Wadley, Ga.
McEwen & Murray, New Orleans, La.
Hanson & Smith, Wilmington, N. C.
J. C. Fulton, Arkansas Pass, Texas.
Calcasieu Lumber Co., Austin, Texas.

M. T. Jones & Co., Childress, Texas.
J. H. Folkey, Korville, Texas.

Hardwoods.

Martin & Vaughan, Bellefonte, Ala.
North Alabama Lumber Mfg. Co., Bridgeport, Ala.
Bridgeport Lumber Co., Bridgeport, Ala.
Hill & Mitchell, Center Star, Ala.
W. A. Koepel, Coalting, Ala.
Decatur Lumber Co., Decatur, Ala.
H. S. Freeman, Decatur, Ala.
Black Warrior Lumber Co., Demopolis, Ala.
Alabama Lumber & Mfg. Co., Gurley, Ala.
C. G. Huffman, Hollywood, Ala.
Clifton & Hendrix, Jasper, Ala.
Elliott & Carter, Jasper, Ala.
W. M. Beatty, Austin, Ala.
J. W. Ray, Arkadelphia, Ark.
Desho Lumber Co., Arkansas City, Ark.
Batesville Lumber Co., Batesville, Ark.
Russell & Elder, Beebe, Ark.
South'n Hardwood Lumber Co., Black Rock, Ark.
E. M. Ford Land & Timber Co., Gilmore, Ark.
Kelley & Wells Lumber Co., Newport, Ark.
Crown City Lumber Co., Lamberthville, Ark.
J. M. Meffert, Lowell, Fla.
Ray & Geise, Bronwood, Ga.
Altamaha Cypress Lumber Co., Brunswick, Ga.
Montford & Mitchell, Butler, Ga.
Glasgow & Henderson, Cassville, Ga.
Green & Eshum, Clay Hill, Ga.
W. H. Allen, Cordele, Ga.
Greer Bros., Ado, Ga.
D. T. Harris, Dixon, Ga.
W. T. Opie, Dover, Ga.
A. J. McMullen, Hartwell, Ga.
Matthews & Anderson, Knoxville, Ga.
R. W. Ballard, Newton Factory, Ga.
O. W. Wadley, Rogers, Ga.
L. T. Brawner, Adairville, Ky.
G. W. Hummer, Adairville, Ky.
W. Conn & Son, Bedford, Ky.
Snider Bros., Berea, Ky.
Gibson & Hale, Flat Lick, Ky.
J. L. Naylor, Wickliffe, Ky.
Samuel Anglen, Lafayette, Ky.
H. E. Miller, Lewisburg, Ky.
Fetter Cochran & Co., Louisville, Ky.
J. C. Williamson, Mouth of Pond, Ky.
The Cumberland Co., Middlesborough, Ky.
Waters & Bringhurst, Pineville, La.
J. H. McBride, Winnfield, La.
The Loomis & Hart Mfg. Co., Chattanooga, Tenn.
Smith & Co., Reedy Ripple, W. Va.
Shelly & Wrigman, Romney, W. Va.

Shingles.

A. C. Danner, Mobile, Ala.
J. Bradley, Hartsell's, Ala.
Conecuh & Patsalga Lumber Co., Luverne, Ala.
G. N. Buchanan, Luverne, Ala.
J. D. Cameron & Son, Mobile, Ala.
Mobile Shingle Co., Mobile, Ala.
Mountain & Sons, Mobile, Ala.
C. G. Richards & Son, Mobile, Ala.
Stewart & Butt, Mobile, Ala.
Gulf States Lumber Co., Montgomery, Ala.
D. Goulet & Co., Black Rock, Ark.
F. McKay, Black Rock, Ark.
Camden Shingle Mill Co., Camden, Ark.
Price Lumber Co., Paragould, Ark.
Carey & Ollinger, Bagdad, Fla.
A. L. Wellman & Co., Beresford, Fla.
Florida Shingle Mills, Brooksville, Fla.
W. Springstead & Son, Brooksville, Fla.
Mearns Shingle Mill, Davenport, Fla.
Wm. A. McCann, Jacksonville, Fla.
A. G. Russel, Oviedo, Fla.
Little & Chapman, Rosewood, Fla.
Atlanta Lumber Co., Atlanta, Ga.
P. G. Grant, Atlanta, Ga.
T. E. Collier, Cordele, Ga.
King & Bursch, Hawkinsville, Ga.
Yarbrough & Perry, Fullington, Ga.
Ino. Akers & Co., Scotland, Ga.
Baily Bros., Toccoa, Ga.
Mayfield Shingle Co., Wishart, Ga.
Worth Lumber Co., Worth, Ga.
G. W. Cleere, Coalton, Ky.
Monroe Smith, McKinney, Ky.
The J. H. Po Shingle Co., Lake Charles, La.
Harris & Thornton, Chattanooga, Tenn.
L. Miller Shingle Co., Orange, Texas.
Kizer Lumber Co., Texarkana, Texas.
Fritz Sitterding, Richmond, Va.
Gurley & Rogers, Norfolk, Va.
Nottingham & Wren, Norfolk, Va.
Ino. L. Roper Lumber Co., Norfolk, Va.

Staves and Heading.

F. W. Sharp & Co., Larkinsville, Ala.
J. R. Adams & Son, Longview, Ala.
Montgomery Stave & Ldg. Co., Montgomery, Ala.
J. C. Sheets & Co., Montgomery, Ala.
P. V. Deland, Black Rock, Ark.
Hammett & Bailey Stave Co., Greenway, Ark.
Arkansas Stave Works, Greenway, Ark.
J. F. Hasty & Son, Paragould, Ark.
G. M. Rosegrant, Paragould, Ark.
Wilson Bros., Piggott, Ark.
Backus Bros., Pine Bluff, Ark.
Little Rock Cooperage Co., Little Rock, Ark.
Tampa Lumber Co., Tampa, Fla.
Hagan & Platt, Pine Level, Fla.
R. H. Brewer, Cedarfoot, Ga.
Georgia & Tennessee Lumber Co., Lacoutre, Ga.
F. H. Waring & Co., Cement, Ga.

Allen & Briggs, Bardwell, Ky.
F. B. Freeman, Cumberland Falls, Ky.
Johnson & Overhiner, Hopkinsville, Ky.
T. H. Meehan, Louisville, Ky.
J. G. Evans & Co., Moorehead, Ky.
Tippett & Co., Moorehead, Ky.
Edward Farley, Paducah, Ky.
Lester & Little, Sloans Valley, Ky.
Pinnell & Webb, Somerset, Ky.
George D. Elke, New Orleans, La.
E. O. Felton, Ronceverte, W. Va.
J. Beckwith & Co., Waverly, W. Va.

Railroad Ties.

W. J. Felt, Greenup, Ky.
G. & A. Kopp, Louisville, Ky.
Southern Tie & Lumber Co., Louisville, Ky.
James S. Pope, Halls, Md.
P. L. Conquest & Co., Norfolk, Va.

Spokes and Handles.

Jacob Wise & Son, Fulton, Ky.
Paducah Handle Works, Paducah, Ky.
Hendersonville Mfg. Co., Hendersonville, N. C.
Rutherfordton Sp. & Hd. Fy., Rutherfordton, N. C.
C. J. Dundas, Statesville, N. C.
Thomasville Spoke Works, Thomasville, N. C.
Johnson Bros., Brownsville, Tenn.

Southern Real Estate Directory.

For the convenience of the many readers of the MANUFACTURERS' RECORD it has been deemed advisable to collect under this head a reliable list of Realty Agencies of the Southern States. The value of such a list for the purpose of Ready Reference will immediately become apparent to all who are interested in the growth of this section.

DISTRICT OF COLUMBIA.

WASHINGTON, D. C.—Chas. A. McEnen, Real Estate and Insurance. 1420 F. St.

GEORGIA.

AUGUSTA—Mulherin & Armstrong, Real Estate and Insurance. Loans negotiated.
MACON American Investment & Loan Co. owns valuable Real Estate in and around Macon. Real estate secured for investors.

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NORTH WILKESBORO—W. F. Trodson, Town Lots and Farm Lands.

OLD FORT—O. H. Blocker, Real Estate, Timber and Mineral Lands.

RALEIGH—J. M. Broughton & Co., Real Estate, city and country realty.

ROCKY MOUNT—Arrington & Arrington, Real Estate. Correspondence invited.

STATESVILLE—P. C. Carlton, Real Estate, Timber and Mineral Lands.

WINSTON—E. R. Amis, Real Estate. First-class investments a specialty.

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COLUMBIA—Geo. W. Parker & Co., Real Estate and Insurance. Loans Negotiated.

COLUMBIA—State & Simmons, Real Estate, Stocks and Bonds. Loans negotiated.

TENNESSEE.

MEMPHIS—Hodge & Bro., 59 Madison St. Real Estate Agents and Dealers.

VIRGINIA.

CHARLOTTESVILLE—J. C. McKennie & Co., Real Estate and Insurance Brokers.

NEWPORT NEWS—W. E. Barrett & Co., Real Estate & Ins. Correspondence solicited.

NEWPORT NEWS—Cottrell Company, Real Estate. Correspondence invited.

NORFOLK—A. W. Cornick & Co., Real Estate Agents, 102 Main Street.

PROPOSALS.

SEALED PROPOSALS will be received by the undersigned until October 4, 1892, for establishing and maintaining an Electric Lighting Plant in the city of Meridian, Miss., (population 12,000 under a five (5) years' contract for lighting the city. Bids will be opened on October 4th, 1892, and the right to reject any and all bids is hereby reserved. Full particulars can be had upon application to E. J. MARTIN, Chairman Light Committee, Meridian, Miss.

U. S. Engineer Office, Wilmington, Del., September 2d, 1892. SEALED PROPOSALS for Dredging in Broad Creek River, Del., Northeast River, Md., Elk River, Md., Chester River, Md., and Choptank River, Md., will be received at this office until 12 o'clock, noon, on Friday, October 7, 1892, and then publicly opened. Specifications, blank forms and all available information will be furnished on application to this office. WM. F. SMITH, United States Agent.

U. S. Engineer Office, Wilmington, Del., September 7, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 29th day of September, 1892, and opened immediately thereafter for all the labor and materials required for certain repairs to the United States Court House, Postoffice, &c., building at Macon, Ga., in accordance with the drawings and specifications, copies of which may be had on application at this office, or the office of the

Custodian at Macon, Georgia. Each bid must be accompanied by a certified check for a sum not less than a per cent. of the amount of the proposal. The right is reserved to reject any and all bids or to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidder. Proposals must be enclosed in envelopes, sealed and marked "Proposal for certain repairs to the U. S. Court House and Postoffice, &c., Building, at Macon, Ga., and addressed to W. J. EDBROOK, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., Sept. 7, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 28th day of September, 1892, and opened immediately thereafter, for all the labor and materials required for furnishing and fixing in place complete, the Low Pressure Return-Circulation, Steam Heating and Ventilating Apparatus for the U. S. Postoffice Building at Hoboken, N. J. in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Hoboken, N. J. Bids will also be considered for any other system of heating and ventilating in lieu of the above, and parties proposing to supply such must submit with their proposal plans and full specification for same. Each bid must be accompanied by a certified check for a sum not less than a per cent. of the amount of the proposal. The right is reserved to reject any and all bids, or to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals must be enclosed in envelopes, sealed and marked "Proposal for the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Postoffice Building at Hoboken, N. J.," and addressed to W. J. EDBROOK, Supervising Architect.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., September 6, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 4th day of October, 1892, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except plumbing and heating apparatus) of the extension to the U. S. Court House, Postoffice, etc. Building at Dallas, Texas, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Dallas, Texas. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any and all bids, and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the erection and completion (except plumbing and heating apparatus) of the extension to the U. S. Court House, Postoffice, etc. Building at Dallas, Texas, and addressed to W. J. EDBROOK, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., September 2d, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 23d day of September, 1892, and opened immediately thereafter, for all the labor and materials required for furnishing and fixing in place complete the Low-Pressure, Return-Circulation, Steam Heating and Ventilating Apparatus, for the U. S. Court House and Postoffice Building at Greenville, S. C., in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Custodian at Greenville, S. C. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any and all bids, and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals must be enclosed in envelopes, sealed and marked, "Proposal for Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Court House and Postoffice Building at Greenville, S. C., and addressed to W. J. EDBROOK, Supervising Architect.

Proposals for Street Lighting.

Bids will be received by the Chairman and Board of Trustees of Georgetown, Ky.

UNTIL SEPTEMBER 19, 1892,

for lighting the public streets of said town by either gas or electricity. Bids will be based upon the following:

BY GAS.—Seventy gas posts for all night, and from dark till 12 o'clock, without regard to moon; also maximum price to private consumers.

BY ELECTRICITY.—Sixteen arc lights of 2,000 candle-power, and twenty arc lights of 1,200 candle-power, in each case bidder to give terms for each additional arc light for same time as required in gas. The bidder will state maximum price to private consumer with incandescent light. Whether the bidder makes a bid to light by gas or electricity, he will bid upon the idea that the town will make a contract for lighting the streets for five years, and also upon the idea that the town will contract for three years.

A. B. BARKLEY,
VI TOR F. BRADLEY, Committee,
S. M. DAVIS,

FURNITURE AND WAGON MANUFACTURERS

Correspondence solicited with FIRST-CLASS MANUFACTURERS IN THESE LINES that may desire a change in location. Plant must be in strictly good order and bear investigation. North Galveston, Texas, the proposed site. Unsurpassed location and climate. Native woods inexhaustible and reached by water. Rail and water transportation facilities. Big inducements to the right kind of factory. Large territory to supply and no competition.

NORTH CALVESTON ASSOCIATION,
BEATTY & PORTER, Managers,
Galveston, Texas.

PHOSPHATE LANDS

THROUGH WHICH PEACE RIVER FLOWS
FOR SEVERAL MILES.

The Georgia Phosphate Co., which is composed of C. H. Phinizy, C. G. Goodrich and T. P. Branch of Augusta, and W. E. H. Searcy of Griffin, Ga., owns

380 ACRES

of rich Peace river Phosphate Land. They desire to sell at once a half interest, with a view of holding the property as an investment for an advance, which is sure to come. There are plants on the adjoining lands on the North, on the South and on the West, and they have had propositions from them to work their lands on royalty as a recognition of their great value.

A BARGAIN.

We prefer to sell a half interest at a bargain and retain the remaining half, but would sell entire property if purchasers insisted on owning the tract alone. Investigation requested. We have also an orange grove we will sell a part or whole interest. For map and circular address

C. G. GOODRICH, Prest.

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Fine Location for Factories, Mills, etc. Situated on the James river (deep water). Address Claremont Citizens' Improvement Committee.

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H. H. McGREW, Middlesborough, Ky.

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BOSTON, MASS.

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ATLANTA, GA.

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Southern Timber Lands.

FULTON COLVILLE,

ATTORNEY AND COUNSELLOR AT LAW,
Gate City Bank Building, ATLANTA, GA.

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EMBOSSED GILDING ON GLASS.

Newest Designs, Finest Work, Lowest Prices.

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If you wish to know something about canning, write to JOHN MURPHY & CO., Baltimore, for prospectus of their valuable book

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Canning Machinery.

Especially adapted to the South. Full instructions furnished for putting up outfit; also for processing all the various canned goods without the aid of skilled labor.

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THOS. J. SHRYOCK & CO.

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Lumber and Commission Merchants,

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By Jno. W. Sibley, Treas.

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The best and cheapest coal is found along the line of the Baltimore & Ohio Railroad.

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Large bodies of timber are offered at low prices along the Baltimore & Ohio Railroad.

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Iron ore of high grade and in unlimited quantity underlies the territory reached by the Baltimore & Ohio Railroad.

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West Virginia, Ohio and Pennsylvania are rich in oil fields, the best of which are on the Baltimore & Ohio Railroad.

Gas

Natural gas wells along the Baltimore & Ohio Railroad are the strongest yet known.

Water

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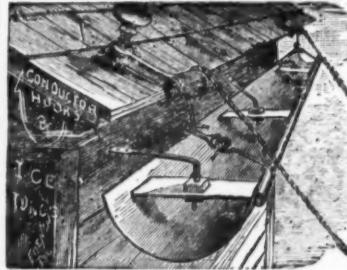
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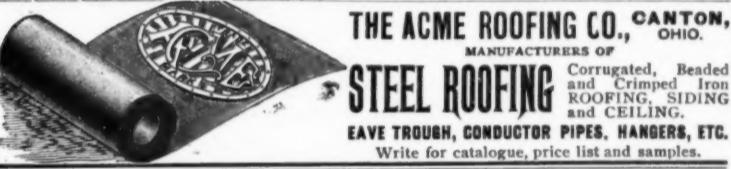
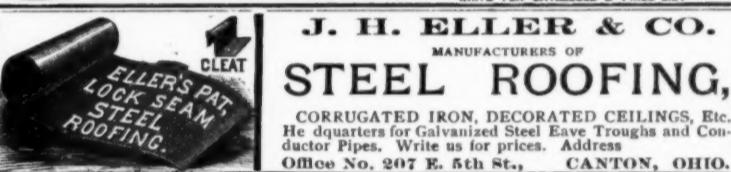
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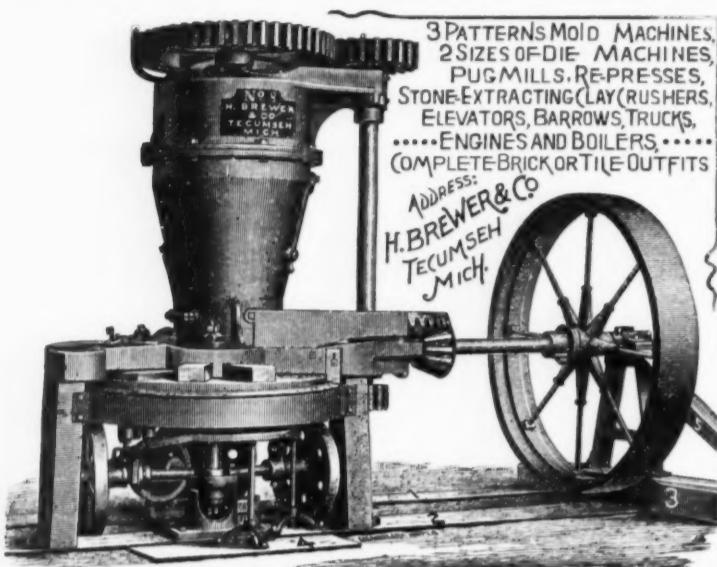
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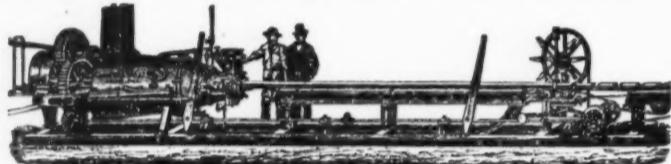
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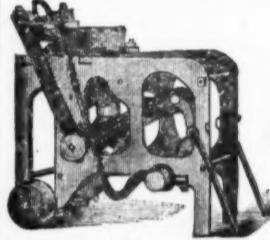


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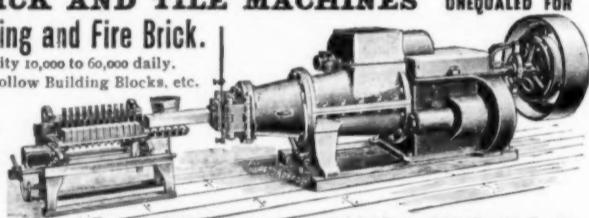
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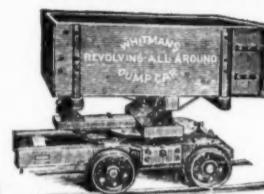
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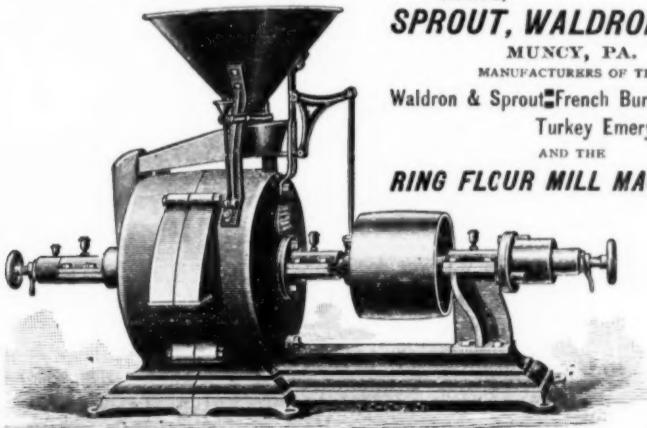
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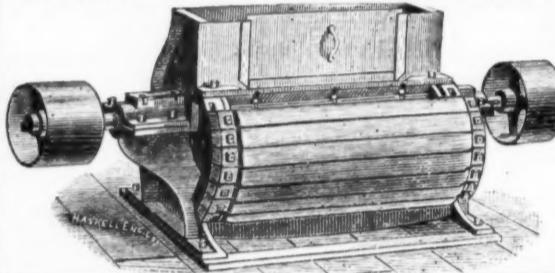
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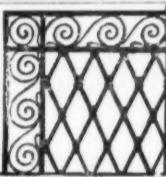
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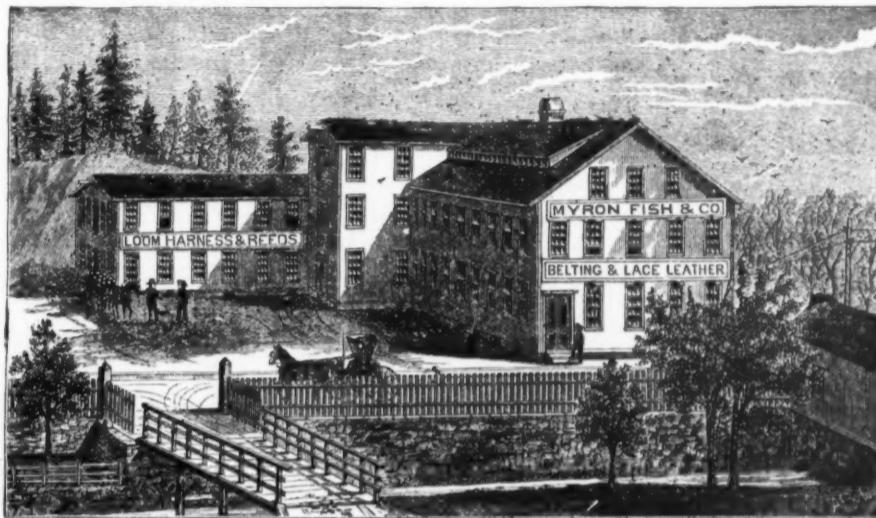
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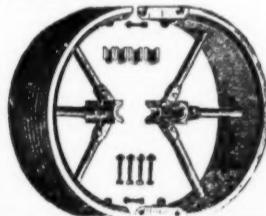
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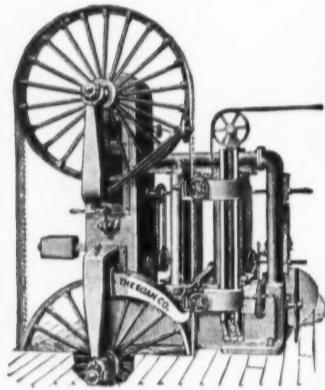
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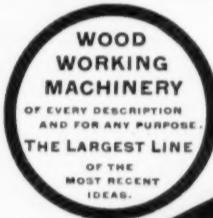
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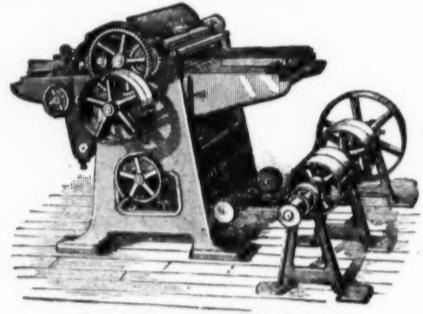
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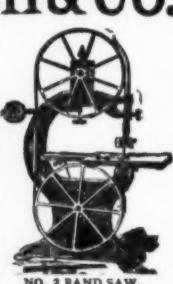
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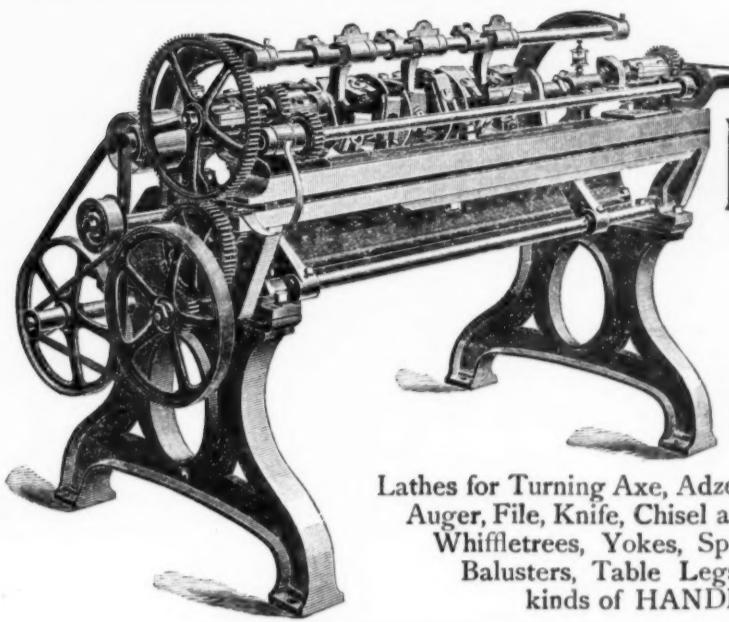
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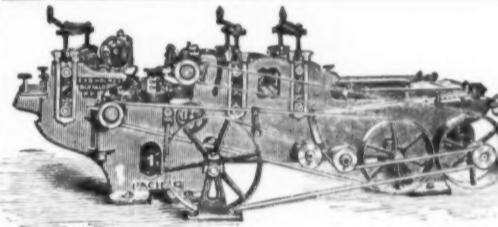
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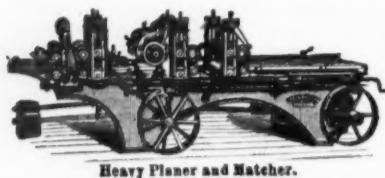


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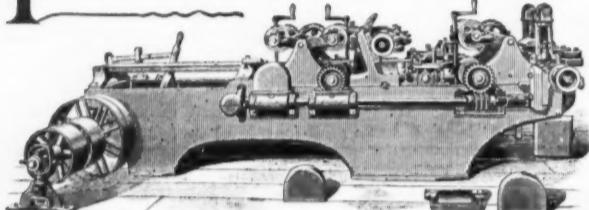
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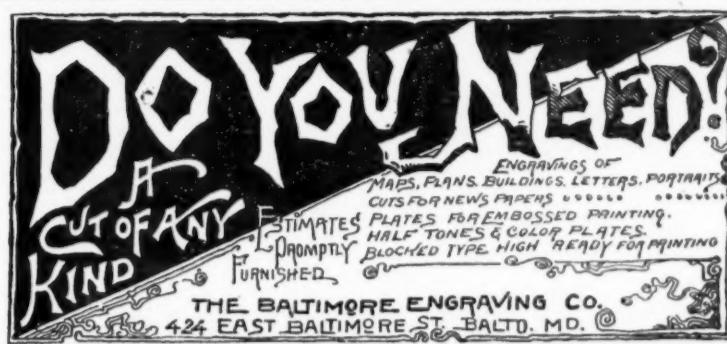
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By HENRY V. POOR.

Messrs. H. V. & H. W. POOR announce the publication of the twenty-fifth annual number of this work, in which is given in full detail the financial condition and the results of operations of all the railroad companies for 1891. Statements, revised by each company prior to publication, are given for about 2,000 companies.

For most companies, the statements printed in the *Manual* are the only detailed ones furnished to the public, and the *Manual* has thus become the only medium by which an accurate knowledge of their affairs can be obtained.

The total railroad mileage of the United States at the close of 1891 was 167,909 miles. Its cost, measured by the amount of stocks, bonds and debt, was \$10,765,626, 41. The gross earnings were \$1,138,024,459, an increase over 1890 of \$40,177,037; the net earnings, \$356,227,883, or 31.30 per cent. of the gross. For interest, \$231,259,810, and for dividends \$90,719,757 were paid. The passengers carried by all the roads aggregated 536,015,802, about nine times as large as the population of the country. From these \$290,799,696 were received, the average charge per passenger per mile being 2.184 cents. Freight tonnage in 1891 equalled 704,398,669 tons, each hauled 115.29 miles, or 81,210,154,322 miles for all. At an average rate of 0.929 mills per ton per mile, this traffic earned for the railroads \$754,185,910. A full report of every company contributing to the enormous aggregate is given in detail in the *Manual*.

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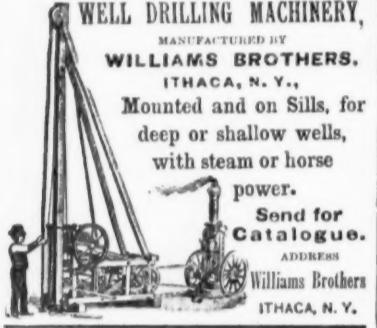
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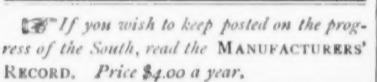
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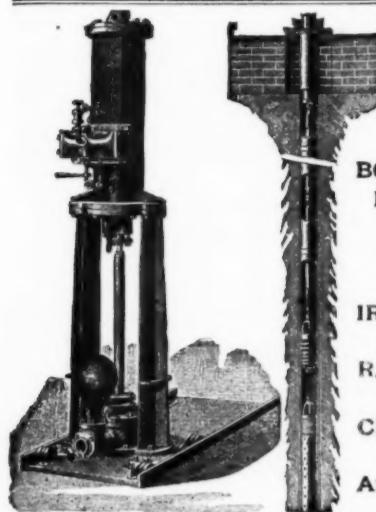
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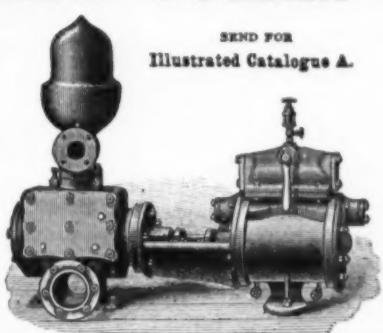
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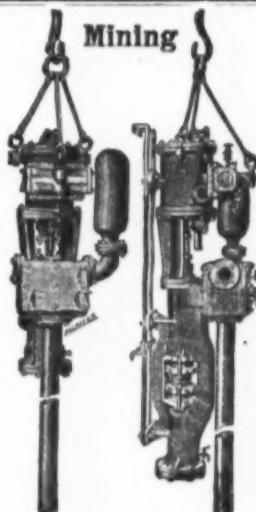
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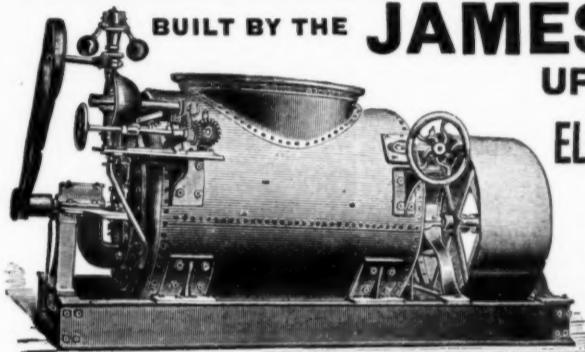
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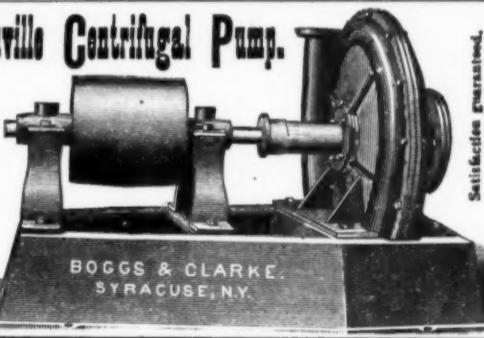


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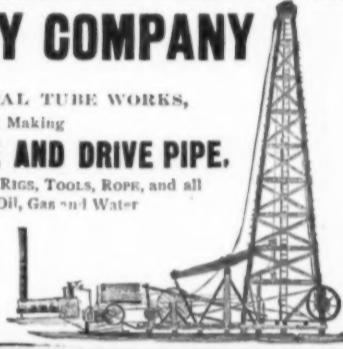
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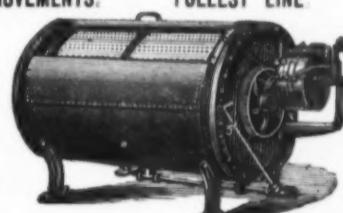
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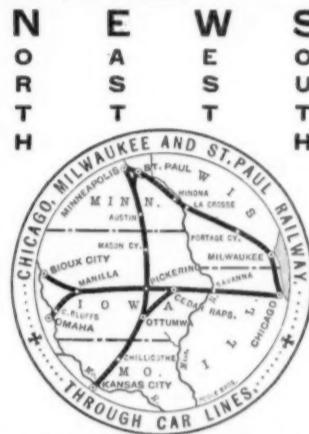
UPRIGHTS, GRANDS AND SQUARES.

Highest grade Instruments manufactured. Endorsed and preferred by the best schools and musical authorities. Only Upright Piano on the market to day equal to the Grand. Reasonable terms. Old pianos taken in exchange. Pianos for rent. A large assortment of Organs constantly on hand. Send for illustrated piano and organ catalogue. Inducements on second-hand Pianos.

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CHARLES M. STIEFF.

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The line of the QUEEN & CRESCEANT ROUTE through KENTUCKY, TENNESSEE, ALABAMA, MISSISSIPPI, and LOUISIANA

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COAL, IRON, TIMBER AND FARM LANDS,

Also THOUSANDS OF ACRES OF LONG LEAF YELLOW PINE for sale cheap.

This road runs through the thriving towns of Lexington, Danville, and Somerset, Ky.; Rockwood, Harriman, and Chattanooga, Tenn.; Ft. Payne, Attala, Birmingham, and Tuscaloosa, Ala.; Meridian, Hattiesburg, Jackson and Vicksburg, Miss.; New Orleans, Delhi, Monroe, and Shreveport, La. Some of the new towns will donate money and land to locate Manufacturing enterprises.

The R. R. Co. will make low rates for Passengers and Freight, and afford investors every opportunity to examine the different localities. If necessary, will send a representative with the party.

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D. G. EDWARDS, G. P. & T. Agt.

Q. & C. Route, CINCINNATI, O.

TAKE THE Cleveland, Lorain & Wheeling R. R. The Most Direct Route Between CLEVELAND, OHIO, AND WHEELING, W. VA.

BEAUTIFUL SCENERY and QUICK TIME.
NO CHANGE OF CARS.

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BALTIMORE AND EASTERN SHORE RAILROAD COMPANY.

BALTIMORE & EASTERN SHORE RAILROAD SUMMER SCHEDULE, in effect JUNE 27, 1892. Leave Pier No. 9, Light street, by Steamer B. S. Ford, daily (except Sunday) for Claiborne, thence by rail for Ocean City and intermediate points, 7:00 A. M. and 3:45 P. M.

Arrive from the above points 3:00 P. M. and 11:00 P. M., except the 11:00 P. M. on Sundays instead of Saturdays.

Freight received and forwarded every week-day for all points on the Eastern Shore.

Full particulars at Office, Pier No. 9 Light street wharf, or to the undersigned.

Cheap Day Excursion to Claiborne. Write or call for information.

A. J. BENJAMIN, Superintendent,
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Wheeling & Lake Erie Railway. NEW THROUGH LINE

BETWEEN

Toledo and Ohio River Points,
STUBENBVILLE, WHEELING, PITTSBURGH and
MARIETTA.

THROUGH COACHES to the OHIO RIVER,
and THROUGH CONNECTIONS to
PITTSBURGH

And all points East, via Akron, Cuyahoga Falls, Kent, Ravenna, Leavittsburg, Warren, Niles, Girard, Youngstown, New Castle and Allegheny. The only line ticketing its passengers through to Philadelphia, New York and New England Cities, via Washington and Baltimore at SHORT LINE RATES.

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20 Miles Shorter than any other line
between Pittsburgh and Cleveland.
4 Through Trains in each direction
Daily.

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Short and Only Direct Route Between

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MARIETTA and WHEELING.

Four Through Trains Daily between Cleveland, Akron and Canton. Through Pullman Palace Drawing Room Buffet Sleeping Cars between Cleveland and Chicago. Ask for tickets via Valley and B. & O. Route.

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ATLANTIC TRANSPORT LINE.

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Calling at Swansea and Philadelphia on the outward passage.

S. S. Minnesota, 5,000 tons. S. S. Missouri, 4,200 tons
S. S. Maryland, 4,200 tons. S. S. Michigan Bldg.
S. S. Montana, 4,200 tons. S. S. Mississippi, Bldg.
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BALTIMORE STORAGE & LIGHTERAGE CO
126 La Salle Street, 1st and 2nd Fenchurch Street.
Chicago, Ill. 1st and 2nd London.
40 Second Street Baltimore, Md.

THE FAVORITE PASSENGER ROUTE.

MERCHANTS & MINERS'

Transportation Company.

Steamers sail from Baltimore Md. TO BOSTON,

Mass., VIA NORFOLK, every TUESDAY AND

THURSDAY at 3 P. M. Fare—First class, \$1.50;

Baltimore TO JACKSONVILLE, Fla.—First

class, \$2.65; round trip, \$3.30; steerage, \$1.50.

All tickets include meals and stateroom accom-

modations. Through tickets sold and baggage

checked to all points South.

For sailing schedules and other information,

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No. 216 Water Street, Baltimore, Md.

RICHMOND AND YORK RIVER LINE.

On and after MONDAY, February 20, 1892, the steamers of this line leave Baltimore daily (Sunday excepted) at 5 P. M. for West Point, Richmond and the South, arriving at Richmond at 9:10 A. M., connecting with trains of the Richmond & Danville System. Steamer leaving Mondays, Wednesdays and Fridays calling at Gloucester Point and Allmond's Wharf; steamer leaving Tuesdays, Thursdays and Saturdays calling at Yorktown and Clay Bank. Through tickets and bills of lading issued to all points of the Richmond & Danville System. Way freight must be prepaid. Fare to Richmond, first class, \$2.00, second class, \$1.50. Tickets sold and baggage checked at Geigan & Co.'s, 205 East Baltimore Street.

REUBEN FOSTER, E. J. CHISM,
General Manager. Gen. Freight & Ticket Agt.
Office, 530 LIGHT STREET.

THE BAY LINE

FOR
Fortress Monroe, Norfolk and the South.

The Bay Line comprises the New and Elegant Steamers "VIRGINIA," "CAROLINA" and "FLORIDA."

All the Comforts and Luxuries of a First-Class Hotel are afforded the traveler. Spacious and Elegant Saloons and State Rooms, furnished with every convenience. Unsurpassed Cuisine, which is made a main feature. Elegant service and courteous attention. Steamers leave Baltimore daily (except Sundays) at 5 P. M. At Old Point Comfort a Delightful Resort at all Seasons of the Year. For Tickets and Information apply at company's Office.

157 W. BALTIMORE STREET, BALTIMORE.

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FURNESS LINE.

REGULAR SAILINGS

FROM

NEWPORT NEWS, VIRGINIA.

FOR LIVERPOOL.

S. S. ISTRIAN 4,000 tons
S. S. BULGARIAN 4,000 tons
S. S. BAVARIAN 4,000 tons
S. S. MA'RID 4,000 tons

FOR LONDON.

S. S. BOSTON CITY 2,500 tons
S. S. RIPON CITY 2,500 tons
S. S. STRAITS OF BELLE ISLE 3,000 tons
S. S. WETHERBY 2,500 tons

FOR GLASCOW.

S. S. MANDALAY tons
S. S. CYNTHIANA 4,000 tons
S. S. FELICIANA tons

FOR HAVRE (Pinkney-Farness Lines.)

S. S. NEARNO 4,000 tons

Through Bills of Lading issued to interior points in the United Kingdom, or on the Continent, at very favorable rates. For freight, &c., apply to C. W. ROWLEY, Manager, Blackstone Building, Baltimore, Md.

MURRELL'S LINE

FROM

BRUNSWICK to LIVERPOOL and BREMEN.

The Only South Atlantic Direct Line to European Ports.

SHORTEST ROUTE TO EUROPE.

Commencing September 30th, 1892, the following Steamships will make regular sailings from Brunswick, Ga., to Liverpool and Bremen:

Steamship.	Tons.	Master.
WENHOF	1893	CLARK
HAY-GREEN	1869	BLA. KLAU.
J. M. LOCKWOOD	1774	JENKINS
STORKE-LEE	1734	BAILEY
DEERHILL	1733	BAINBRIDGE

Additional Steamships will be placed on the line as busi-
ness warrants.

S. S. DEERHILL will sail from Liverpool for Brunswick September 1st.

S. S. HAY-GREEN will sail from Brunswick for Liverpool September 30th.

Consignments solicited to all points in United Kingdom and Continent of Europe.

For Freight, Passage and general information apply to

THE BRUNSWICK TERMINAL CO.

General Agents, BRUNSWICK, GA.

Or Messrs. C. E. DWYER & CO., Agents,

28 Brunswick Street, Liverpool, England

POPULAR AND DIRECT ROUTE.

THE BAY LINE

For Old Point Comfort, Norfolk and the South.

Steamers leave daily (except Sunday) Union

Dock No. 2, Canton Wharf 7 P. M. arrives

Old Point Comfort 7 A. M., at Norfolk at 8 A. M.,

Portsmouth 8:15 A. M. At OLD POINT COMFORT

connect with CHESAPEAKE & OHIO RAILROAD

for Richmond, Charlottesville, Greenbrier, White Sulphur Springs, Louisville, Cincinnati and all points West. At NORFOLK with NORFOLK & WESTERN RAILROAD for Petersburg, Richmond, Lynchburg, Roanoke, Bristol, Knoxville, Chattanooga, Memphis and the Southwest; also with the NORFOLK

SOUTHERN RAILROAD for Elizabeth City, Edenton and Eastern North Carolina. At PORTSMOUTH, VA., with SEABOARD &

ROANOKE RAILROAD for Weldon, Raleigh, Southern Pines, Pine Bluff Health Resort, Peachland, Mount Holly, Charlotte, Fayetteville, New Bern, Wilmington, Charleston, Columbia, Augusta, Savannah, Jacksonville and all PRINCIPAL

SOUTHERN CITIES.

Palace Steamers, Unsurpassed Cuisine, Unsurpassed Night's Rest. Sure Connection

For tickets and information apply at Company's Office, 129 E. Baltimore Street,

or on board steamers.

F. BROWN G. T. A. KENSON JONES, Agt.

NORTH WILKESBORO,

NORTH CAROLINA,

One of the Conspicuous Successes of the Year in Town Building.
Presents the Following Record:

Population March 4, 1891, actual count, 48.

Population March 4, 1892, actual count, 348.

Gain in one year 625 per cent.

Townsit purchased November 11, 1890; act of incorporation passed by the Legislature, March 4, 1891; first lot sold at private sale, May 12, 1891. Within the first year of its existence ten miles of streets have been graded, and \$22,000 spent in public improvements. Where prior to March 4, 1891, there was only a farm settlement without pretensions to being even a village, there is to-day a thriving, busy, growing, trading and manufacturing center, with

A Large Well-Kept Hotel,
The Bank of North Wilkesboro, \$40,000 Capital,
A large Livery and Sale Stable,
Two Large Wholesale Stores,
One Hardware Store,
One Furniture Store,
Ten General Merchandise Stores,
Three Saw Mills, Sash and Blind Factories,
One Foundry and Machine Shop,
A Handsome, Well-Edited, Home Print Newspaper, The North Wilkesboro News,
One School,
Two Churches Under Way,

Two Brick Yards in operation, and a number of other enterprises practically secured.

Arrangements are about completed for a Woolen Mill.

A large iron front brick block, containing Bank Building, two Store Rooms, Opera House, and Printing Office; A graded School Building and an Iron Bridge across the Yadkin River, in the Eastern part of town, will be completed during the spring and summer.

Turnpike roads to Tennessee and Virginia are about completed; county roads leading into town are being improved and numerous good new ones built, with the intention of making this the center for all the wagon trade of this section.

A tobacco warehouse for the sale of the high grade leaf of this district will be built during the summer, so as to give a home market for the tobacco crop that will be grown this year.

Compare this record with that of any other new town you have heard of during the past dull season.

NORTH WILKESBORO,

Is 75 miles west of Winston-Salem, at the present terminus of the Northwestern North Carolina Railroad, which when ultimately completed to Bristol, Tenn., will give the shortest route between Norfolk and Cincinnati. North Wilkesboro is the most important trading point between Winston-Salem and Bristol, and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States Postal Map on an air line 75 miles southeast of Bristol, 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southeast of Mt. Airy, and 80 miles south of the Norfolk & Western Railroad, in the valley of the Yadkin, between the Brushy Mountains on the South and the Blue Ridge on the North. Climate, healthfulness, water, drainage and location unsurpassed by any town in North Carolina.

The townsit consists of 1,088 acres, located, by the way on a farm originally owned by General John B. Gordon's grandfather. The first public auction sale of lots was held December 2, 1891, and 188 lots were sold. Purchasers have in many cases been able to resell at a handsome profit. The company has sold 50 lots at private sale since then, on many of which houses are now being erected. It is a significant fact that among the business buildings erected a large per cent. are substantial brick structures, while for architectural beauty and cost many of the residences are much superior to those usually found in a town so young.

At the second auction sale, May 11th, 1892, 35 business lots and 44 residence lots sold for \$16,490, an average of \$8.35 per front foot, which is \$2.53 per front foot (or 44 per cent.) more than the average at the sale last December, which was the best sale made in North Carolina during last year. Since the sale, a contract has been closed for the location of another large saw mill, planing mill, sash, door and blind factory combined, which will do a large shipping business. A contract is closed for the location of extract works with a capital stock of \$300,000. The plant will cost \$125,000 and will cover six acres of land. Twelve families from the North will move down. The company will erect a large electric-light plant in connection with the extract works. North Wilkesboro will get there and will not be long doing so.

Through the townsit runs a stratum of serpentine stone, 200 feet in width, and also a bed of iron ore equal in quality to that of Cranberry. The Town Company also owns 4,100 acres of mineral, granite and timber lands in Wilkes County. It is probable that the work of developing the great mineral and timber interests of the section will be commenced in a short time, and on an extensive scale.

Sites will be donated and stock subscribed to such manufacturing enterprises as may be advantageously located here.

The policy of the Company is a most liberal one in this respect, it being determined to aid all legitimate enterprises to any reasonable extent. There are 328 miles of water courses within the borders of Wilkes County, furnishing to the vicinity of North Wilkesboro a water power as great as Fall River. The climate, while not moist, is neither harsh nor dry, and is especially suitable to the spinning of fine cotton yarns, such as cannot be made in the extreme South or North. There is also a fine opportunity here for bleacheries, to the establishment of which at Southern points there is a tendency at present. As they can't go where sluggish streams, impregnated with vegetable matter, abound, the quick flowing streams of clear mountain water, so numerous about North Wilkesboro, afford everything desired. Numerous other industries will do well at North Wilkesboro, and will be most substantially encouraged to locate there.

Capitalists, Home Seekers, Health Seekers, Manufacturers of wood and iron, and many other industrial workers may well investigate North Wilkesboro's advantages.

The above-described townsit and other property belongs to the Winston Land & Improvement Co., which was chartered by act of Legislature, session of 1887; ratified March 4, 1887, chapter 82. Authorized capital \$1,000,000. Present capital stock \$125,000, all subscribed and paid up.

OFFICERS—G. W. HINSHAW, President, of Hinshaw & Medearis, Wholesale Merchants; Vice-President People's National Bank, Winston, N. C. DR. W. L. BROWN, Vice-President, of Brown Brothers, Tobacco Manufacturers, Winston, N. C. W. F. TROGDON, Secretary and Treasurer, North Wilkesboro, N. C.

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ATTORNEYS—T. B. FINLEY, ESQ., North Wilkesboro, N. C. HON. C. B. WATSON, Winston, N. C. HON. J. C. BUXTON, President First National Bank, Winston, N. C. HON. W. W. BARBER, Wilkesboro, N. C.

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W. F. TROGDON, Secretary and Treasurer,

NORTH WILKESBORO, N. C.

As A LOCATION for Manufactures

Of Iron and Wood and for General Industrial and
Business Enterprises.

FRONT ROYAL, VA.

INVITES INVESTIGATION.

Its location, at the junction of the Norfolk & Western Railroad (Shenandoah Valley line) and the Richmond & Danville's branch, give it excellent transportation facilities. It is only a few hours' ride distant from Washington. The Norfolk & Western's direct line to Washington will be built from Front Royal.

There is no Finer Agricultural Country in the World than the Famed Shenandoah Valley, in which Front Royal is Located.

A WIDE RIVER WITH SWIFT CURRENT FURNISHES WATER POWER
AND MAKES DRAINAGE PERFECT.

Front Royal is a Prosperous Town, with an Extensive Mercantile Business
and Many Manufacturing Enterprises in Operation and
Under Construction.

INVESTIGATION OF ITS ADVANTAGES IS INVITED BY THE

Front Royal--Riverton Improvement Company,
FRONT ROYAL, VIRGINIA.

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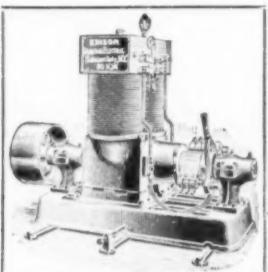
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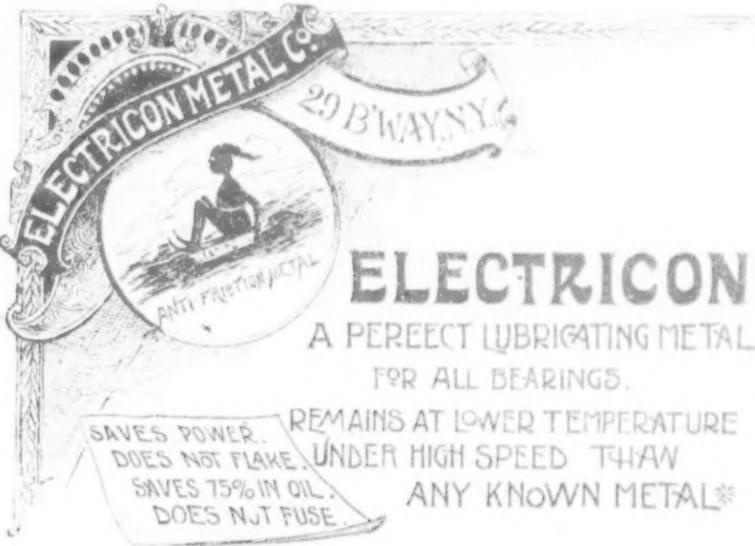
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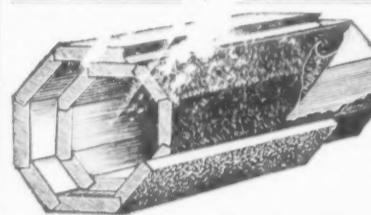
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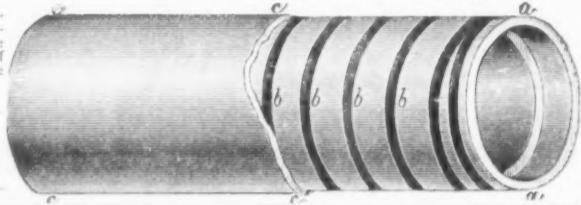
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